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<th>S.No</th>
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**Semester – 2**

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**Course No: 1    DBPM101    Growth of Poultry Industry**

**Theory – Syllabus**

Past and Present Scenario of Poultry Industry - Domestication of Poultry – Genetic Classification of Chicken and other species of Poultry- Layers, Broiler, and other class of Poultry – Hybrids available and its merit and demerits- American, English, Mediterranean, Asiatic, Indian breeds, dual purpose breeds and non-descript birds - Terms used in Poultry farming - Importance of broiler production under Indian scenario - Definition of Poultry and Broiler - Growth of Poultry industry in India – Poultry population and other Poultry related statistics, per capita meat and egg availability in India and different regions - different States - System of rearing- range- semi intensive- intensive rearing
advantages and disadvantages - Introduction to rearing of Turkeys, Ducks, Japanese Quails, Guinea fowls and Geese for meat production - Poultry integration, Contract farming and Linkages.

Practical - Syllabus

Rural chicken - Birds developed by SAUs - Dual purpose breeds- Asiatic breeds, English breeds, American breeds- Commercial broiler birds, ducks, geese, turkeys, Japanese quails, guinea fowls, pigeons, Emu for meat production – Visits to different Sizes of Commercial Broiler farms.

Course No-2       DBPM 102           Poultry Basic Anatomy & Physiology

Theory- Syllabus

External parts of chicken -  Exoskeleton - Feather patterns - feather tracks - feather sexing of day old chicks - Digestive system - Digestion and metabolism - Respiratory system - Circulatory system - Thermoregulatory mechanism –musculo-skeletal system - Excretory system – Endocrinology - Male and Female Reproductive system, Physiological standards in poultry.

Practical - Syllabus

Feather patterns - Feather tracks - Comb patterns- Digestive system - Enzymatic digestion - Draw diagram of Poultry skeleton - Draw diagram of Poultry Digestive system - Draw diagram of Poultry respiratory system - excretory system – Identify and mark the endocrine organs.

Course No-3    DBPM 103    Broiler Housing, Equipment and Environment

Theory- Syllabus


Practical - Syllabus

Equipment, feeders, drinker Systems, Housing programs - Farm lay out, House design, Orientation of shed, Cross Ventilation, lighting system - Seasonal management - Deep litter house, Cage house, Cage House designs - Broiler house model preparation- water quality analysis- Depopulation and standard Cleaning procedure to receive day old chicks.
**Course-4  DBPM 104  Broiler Management Paper-I**

**Theory - Syllabus**

Brooding of broiler Chicks – care and management of broilers at early stage of life - Floor space requirements, brooder space - watering space - feeding space requirement for chicks and finisher birds – random weighing of chicks - Arrangements of brooder guards - cart wheel arrangement of feeders and waterers, different brooding equipments- Brooder setting purpose - Litter materials and litter management at different age of broilers - Lighting for broilers - Water quality and Watering of broilers - water sanitation - Chick management and Finisher bird management - Feeding and watering - vaccination at different age of broilers – - Various registers maintaining in broiler farm -Handling, transportation of live birds for processing — Packaging, storing, transport, labelling- Composition and nutritive value of meat, Grading and preservation methods of meat - Ante mortem examination Broiler dressing – ready to cook yield – cut – up parts, Meat hygiene and maintenance - Disinfection of dressing plant, HACCP Procedures in processing plant - Nutritive value and quality control of processed meat and meat products - Poultry waste handling and hygienic disposal.

**Practical - Syllabus**

Weighing of day old chicks, Feeding of chicks, Brooding equipment, Brooding arrangements - Preparation of house for receipt of day old chicks, Chick placement and looking for comfort, watering of chicks - Lighting programs for broilers and Water quality analysis - Floor space requirements, brooder space, watering space and feeding space at different age of broilers – random weighing of chicks - Quality of different litter materials and litter management at different age of broilers - Different system of feeding of Starter and Finisher birds - Avoiding feed wastage methods- Processing of chicken-preparing ready to cook chicken- packaging, storing and transport of ready to cook chicken.

**Course No-5  DBPM 105 Broiler Nutrition and Feeding Paper 1**

**Theory Syllabus**


**Practical - Syllabus**

Commonly used major feed ingredients - Energy supplements – Protein supplements- Vegetable and animal origin feed ingredients identification - Feed manufacturing- preparation of feed for different age groups of broilers - Feeding Day old chicks, starters and finisher birds - Proximate analysis-moisture, Crude fibre, Protein, Ether Extract, Ash, NFE, Ca and P - Calculation of NFE.
Course No-6  DBPM 106  Broiler Flock health and Bio security Paper I

Theory - Syllabus
Introduction to Important broiler diseases: Commonly occurring diseases – Emerging diseases – Nutritional disorders-fungal and parasitic diseases and prevention methods - Disease control measures and sanitary management - Medication-vaccination - HACCP in control of diseases in broilers - SOP implementation – Periodical inspection and Post mortem examination and carcass disposal- Bio security measures - Collection of specimens for lab for bacterial, fungal and viral disease diagnosis - Feed toxins, Insecticides and other toxicities- Dead bird disposal, incinerator, Manure pit - shed sanitation and hygiene auditing.

Practical – Syllabus
Microscope, Micrometry – Vaccination methods – Mortality and liveability-record maintenance- Clinical methods of examination and identifying the abnormalities - Body temperature, respiration - Methods of injecting drugs, sera, vaccine etc - Cleanout procedures - Collection, dispatch of specimen material for laboratories examination - Post mortem examination- Laboratory results interpretation.

Course No-7 DBPM201 Broiler Management Paper-II

Theory - Syllabus

Practical syllabus

Course No-8  DPBM202 Broiler Production Economics and Marketing

Theory - Syllabus
Economics - terms, definition , theory of demand and consumer behaviour - Economics- laws and types of supply, cost concepts-fixed and variable - Marketing- terms , concepts - Different systems of book keeping- single and double entry system - Merchandising and physical functions - Marketing of broiler meat and Marketing channels - Safety of Poultry products - Implementation of GMP and HACCP procedures for food safety - Broiler record keeping- cost of production per bird, per kg live weight & per kg dressed weight - Record management, methods to reduce the cost of production of
broilers - Procedure for developing a bankable project for broiler farm, feed mill, meat processing plant.

Practical - Syllabus

Book keeping; general entry, writing of journal and ledger, cash book - Analysis of financial accounts-income and expenditure accounts, trading account, profit and loss accounts - Profit and loss accounts, income and expenditure accounts, balance sheet bills of exchange (bill of receivable and bill of payable) - Various registers maintaining in broiler farm - Visit to farms, market and preparation of report.

Course No-9   DBPM 203   Broiler Nutrition and Feeding Paper II

Theory - Syllabus

Nutrient in different ingredients- Energy feeds – plant and animal protein rich feeds- fat rich feeds and the levels to be included - Essential Amino acids, critical amino acids and Limiting amino acids - Calculating the nutrient requirements for feed formulation - Sex separate feeding and its advantages - Nutritional deficiency in broilers - Feed toxins , anti metabolites and feed additives - Introduction to probiotics and prebiotics – Exo-enzyme supplementation for better digestion and metabolism – advantages and disadvantages.

Practical - Syllabus

Feed formulation, feed mixing - Sampling of raw and finished ingredients - Proximate Principles and Feed toxin analysis of different feeds and ingredients - Ideal storage of poultry feed ingredients and feeds - Physical evaluation of the quality of ingredients.

Diploma in Broiler Breeder Production and Management

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<td>DBBM-104 Management of breeder replacement stock</td>
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<td>DBBM-105 Breeder layer Management</td>
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<td>Feather patterns, feather tracks - Comb patterns - Draw Poultry skeleton - digestive system – Enzymes production - Draw diagram of Poultry respiratory system – Thermoregulatory Mechanism - Draw diagram of Male and Female Reproductive organs - Mark the endocrine organs - Draw diagram</td>
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of circulatory system - excretory system - Draw the diagram of egg structure- Egg Quality measurement - internal and external quality of eggs- Farm Visits.

**Course No-3  DBBM 103  Breeder Housing, Equipment and Environment**

**Theory - Syllabus**


**Practical-Syllabus**

Equipment, feeders, Drinker Systems - Housing programs - Farm lay out, House design - Orientation of shed, Cross Ventilation, lighting system - Deep litter house, Cage house - Breeder house model preparation - Depopulation and standard Cleaning procedure to receive day old chicks -Breeder Farm Visits.

**Course no-4  DBBM104  Management of breeder replacement stock**

**Theory - Syllabus**


**Practical - Syllabus**

Preparation of house for receipt of day old chicks - Brooding arrangements, Chick placement and looking for comfort - Weighing of chicks – Feeding and watering of chicks and grower - Disinfection procedures – Debeaking, dubbing, vaccination , farm and water sanitation and disinfection procedures.

**Course No-5  DBBM 105  Breeder Layer Management**

**Theory - Syllabus**

Management of breeders in deep litter ,cage and slat floors- Grading of birds – Uniformity - schedule for breeders – pre-breeder management-Systems of mating - Pen mating, flock mating - Management of breeder male - Semen collection, quality - Artificial Insemination – Selection and
culling of non layers - Seasonal management-Management of breeders during adverse conditions -
management during pre peak, peak and post peak laying periods - causes of dead germs and dead in
shell and rectification methods-management of breeders for optimal egg production- breeder farm
operations and routines- Lighting programme for breeder birds - Intensity of light, duration of light,
colour of light used- in season and out season flock management.

**Practical - Syllabus**

Lighting arrangement in breeder farm – Seasonal management-Management of breeders during
adverse conditions - Grading of birds based on body conformation – Collection of semen - Artificial
Insemination – Practicing – Semen quality examination - Judging best Male and female broiler -
Selection of Sire and Dam for next generation- breeder farm operations and practices.

**Course No-6  DBBM 106  Breeder Nutrition and Feeding procedures**

**Theory - Syllabus**

Nutrient requirements for breeders, Breeder feed fundamentals - Breeder feed ingredients and
feed- Feeding systems- weekly growth rate, feed conversion - Factors influencing feed consumption -
Standards of feed stuffs - Feed manufacturing - Breeder performance indices – feeding methods: Sex
separate feeding- Restricted feeding-control feeding - Feed toxins , anti-metabolites and feed
additives - Nutritional deficiency in breeders.

**Practical - Syllabus**

Commonly used major feed ingredients - Proximate analysis-moisture, Crude fibre, Protein - Ether
extract, Ash, Nitrogen free extract - Calcium, Phosphorus - Calculation of NFE- mycotoxin estimation
and detection - Feed plant visit - Feed formulation - Feed manufacturing- Preparation of feed of
different age groups of chicken - - Various registers maintaining in broiler farm - Sampling for lab test
of raw and finished ingredients- mash, crumble, pellet feed preparation.

**Second Semester**

**Course No-7  DBBM 201  Breeder Flock Health and Bio security**

**Theory - Syllabus**

Introduction to Important broiler breeder diseases: Bacterial, Viral, Fungal and Parasitical Diseases –
Commonly affecting Bacterial diseases - Viral diseases - Fungal diseases - Parasitical diseases -
Metabolic disorders – Vitamin and Mineral deficiencies –Immunity and immune modulation- Disease
control measures – Sanitary measures - Medication-vaccination - biosecurity measures - Post
mortem examination and carcass disposal - Disease prevention management.

**Practical - Syllabus**

Clinical methods of examination and Identifying the abnormalities & Abnormal body discharge -
Disinfection procedures – Evaluation of disinfectants - Disinfestations - vaccination and medication
procedures- - Collection, processing for examination of blood, faeces - Collection, preservation,
fixation and dispatch of specimen material for laboratories examination – Post mortem examination and carcass disposal – Microscope- Micrometry - Demonstration about disposal pit and incinerator.

Course No-8  DBBM202  Broiler Breeder Hatchery Management

Theory - Syllabus


Practical - Syllabus

Selection of hatching eggs, fumigation of hatching eggs - Hatchery design, Lay out and setter and Hatcher of Incubators, Accessory equipment of hatchery - Recording of Setters and hatchers temperature, humidity - Recording of Setters and hatchers temperature, humidity - Routines of Incubators, setting, candling, vaccination, sexing, grading, packing and transport of chicks - Hatchery cleaning and sanitation methods, causes of dead in germs, dead in shells and rectification methods.

Course No-9  DBBM203  Broiler breeder Production Economics and Marketing

Theory - Syllabus

Economics - terms, definition , theory of demand and consumer behaviour - Economics- laws and types of supply, cost concepts-fixed and variable - Marketing- terms , concepts - Different systems of book keeping- single and double entry system - Merchandising and physical functions – marketing of broiler breeder chicks – marketing channels- Safety of Poultry products - Economic parameters on returns from breeder e.g. saleable chicks/hen/production cycle - Implementation of GMP and HACCP procedures for food safety - Broiler breeder record keeping- cost of production per chick- Record management, methods to reduce the cost of production of breeder chicks.

Practical - Syllabus

Book keeping; general entry, writing of journal and ledger, cash book - Analysis of financial accounts- income and expenditure accounts, trading account, profit and loss accounts - Profit and loss accounts, income and expenditure accounts, balance sheet bills of exchange (bill of receivable and bill of payable) - Visit to farms, market and preparation of report.
Certificate Courses - Commercial Broiler Management

Lesson-1 CCBM-101 Introduction to Broiler production and Housing

Domestication of poultry- Definition of poultry terms, Growth of poultry industry in India – poultry population and other poultry related statistics and demography –Economic traits in broiler - broiler integration and contract farming. Broiler housing: location and specifications- Housing and broiler growing programs –Ideal broiler house - All in All out systems - Environment: Macro environment and micro environment system conditions and control, lighting management.

Lesson-2 CCBM-102 Broiler Management

Preparing the house to receive chicks- Brooding and rearing of broilers - Floor space, feeder, waterer space requirements- Litter materials and litter management - Lighting for broilers - Water quality and Watering of broiler - water sanitation - Management during winter and summer seasons and adverse conditions - weight monitoring for comparison.

Lesson-3 CCBM-103 Broiler Nutrition and Feeding


Lesson-4 CCBM-104 Broiler Flock health and Bio security

Important and common broiler diseases - Other emerging diseases – Disease control measures- Medication-vaccination- biosecurity measures- farm sanitation and disinfection procedures- safe disposal of dead birds and farm wastes .

Lesson-5 CCBM-105 Broiler Processing, marketing and Economics


CCBM : Practical Syllabus:

from Broiler chicken - Profit and loss calculation - Different type of Broiler farm visits and interaction with the farm owners - Farm stay for hands on training/practice.

**Certificate course - Broiler Breeder Management**

**Lesson-1 CBBM-201 Breeder Housing and Management**

Location of breeder farm - Breeder housing-Housing and breeder growing programs - different systems of housing - Environment: Macro and micro environment systems conditions and control.

**Lesson -2 CBBM-202 Incubation, Hatching and Brooding Management**

Hatchery location and building design- Collection, selection and care of hatching eggs – Hatchery management: Fumigation and sanitation- Incubation principles: Temperature, humidity, turning, ventilation, position etc- Incubation practices – Types of incubators - Hatchery routines: setting, candling, transferring, pulling, vaccination, sexing, grading etc. - Disposal of hatchery wastes – HACCP and GMP practices followed in hatchery.

**Lesson -3 CBBM-203 Breeder management and Nutrition**


**Lesson -4 CBBM-204 Breeder Flock Health and Bio security**

Economically important and metabolic Diseases in breeders- vertically transmissible diseases: Salmonellosis, Mycoplasmosis etc- Screening for vertically transmissible diseases – Flock testing and culling– Other commonly occurring diseases – Disease control measures- Medication-vaccination- biosecurity – Post mortem examination, collection of materials for lab. Diagnosis and carcass disposal – SOP adopted.

**Lesson -5 CBBM-205 Breeder Production Economics and Marketing**

Economic parameters on returns from breeder’s - saleable chicks/hen/production cycle - Breeder farm records maintenance – Bankable project reports- breeder performance indices.

**CBBM: Practical Syllabus:**

Economic traits in poultry – Draw diagrams of Skeletal system, Digestive system, Reproductive system, excretory system and identify endocrine organs - Equipment, feeders, Drinker Systems – Breeder farm lay out, House orientation and design - Orientation of shed, Cross Ventilation, lighting system - Feeding and watering of breeders - Deep litter house, Cage house - Commonly used major feed ingredients – demo of Proximate analyses of feed ingredients and finished feed - feed mixing - Collection of semen - Artificial Insemination – semen quality identification – Identification of dead germs and dead in shells of incubated eggs- Hatchery sanitation- Incubation techniques- SOP to be
followed in hatchery- Demonstration of diagnostic techniques - Various registers maintaining in breeder farm – Visit to Hatchery- Broiler breeder farm and Broiler grower farms, feed mill processing plant and interaction.

**Certificate course - Feed Manufacturing Technology**

**Lesson -1  CFMT-301 Feed plant location, buildings, machinery and equipment**

Location and Construction of feed mill, ware house and other accessory buildings—different feed mill designs- feed milling equipment-mash, crumbles and pellet mills- principles and structural details-Biosecurity measures in feed plant.

**Lesson -2 CFMT-302 Feed Ingredients and feed supplements and additives**

Classification of feed ingredients-various feed ingredients used in poultry feeds -Feed supplements–nutrient feed supplements: vitamins, minerals, amino acids etc. - non-nutrient feed supplements: enzymes, probiotics, prebiotics, antibiotics, herbs, performance enhancer's - Feed additives- Physical evaluation, spot tests etc.

**Lesson-3 CFMT-303 Feed Formulation**

Nutrient requirements of poultry- nutritive values of Feed stuffs- demonstration of linear programming- Formulation of different feeds for different ages and classes of poultry- calculating the nutrients in different feeds and feed stuffs - using least cost formulation software.

**Lesson-4 CFMT-304 Feed Manufacturing process and Quality Control**

Storage planning , Labelling the lots Batch planning -Batch weighing as per formula, grinding, - pre-mix preparation- feed mixing – oil and molasses addition- remixing- mash feed preparation- boiler operation- conditioning-pelleting, cooling, crumbling, sieving- weighing, packaging - Recording, Labelling, Batching, Storing and feed dispatch - SOP and safety measures adopted in feed plant.

Establishing a feed analytical laboratory- collection of materials for laboratory assay- Sampling, packing and labing to send it to lab- Analyses of raw ingredients and feeds for proximate principles and other nutrients by demonstration – detection and estimation of Feed toxins and adulteration.

**Lesson-5 CFMT-305 Feed economics**

Feed mill record keeping- Calculating Cost of production of different feeds- costing procedures-preparing a bankable project for a feed mill- insurance- Marketing of feed– Cost reckoning.

**CFMT- Practical Syllabus:**

Feed Mill design and Construction - Feed mill Layout – equipment - Identifying quality of feed ingredients - Commonly used feed ingredients - Proximate analyses for feed ingredients quality and finished feed - Feed formulation - feed mixing - preparation of feed of different age groups of chicken - Sampling of lab test of raw and finished products – Custom mixing methods - feed additives - Grinding - Demonstration of a hammer mill, roller mill, and other grain sizing equipment and how to perform a particle size analysis – feed mixing - A demonstration of mixers in operation of mixing dry ingredients - addition of liquids, and methods of determining mixer performance and mix
uniformity – methods of adding trace minerals and antibiotics - Pelleting - Demonstration of pelleting and method of operating pelleting equipment - measuring pellet quality using the tumbling can Pellet Durability Index to determine pellet quality - Cost of production of poultry mashes, crumbles and pellets for different age groups - Occupational Safety - Visits to feed plants and hands on training.

**Certificate course- Incubation & Hatchery Management**

**Lesson-1** CIHM-401 Location and construction of hatchery

Location and construction of hatchery buildings - Hatching equipment – Incubators, setters, hatchers, candlers, vaccinators, generator, egg trolleys, chick boxes etc. - AI & sexing equipment.

**Lesson -2** CIHM-402 Hatchery operation procedures

Incubation principles: Temperature, humidity, turning, ventilation, position etc - Incubation practices – Types of incubators – incubator handling maintenance- Hatchery routines: selection, care and storing of hatching eggs, setting, candling, transferring, pulling, vaccination, sexing, grading, packaging, despatch etc.- fumigation procedures.

**Lesson -3** CIHM-403 Hatchery sanitation, medication and vaccination

Sanitation and disinfection of hatchery premises and incubators- hatchery borne, vertically transmissible diseases and their control - Vaccination and medication of Day old chicks– Factors affecting fertility and hatchability- Egg breakout studies- Care of baby chicks - Rendering and disposal of hatchery waste - Sanitation of hatchery, equipment and hatchery hygiene- Hatchery failure and troubleshooting- Hatchery borne infection and chick diseases.

**Lesson -4** CIHM-404 Hatchery Economics and marketing

Cost of production of day old female and male chicks- marketing of day old male and female chicks - Project preparation for hatchery - Record keeping in hatchery in hatchery operations.

**CIHM: Practical Syllabus:**

Certificate course - Poultry Health Management

Lesson -1  CPHM-501  Health & Basic signs of diseases
Parts of chicken, their normal appearance and functions- changes during diseases- health and pathology definitions- Inaction – Isolation – off feeding and watering- drooping- discharges from natural orifices – Normal physiological parameters in chicken.

Lesson -2  CPHM-502  Common Diseases of chicken

Lesson -3 CPHM-503 Examinations of sick and dead birds and Diagnostic tools
Examination of sick birds- collection of flock history- Post-mortem examination of birds-Collection of materials for lab - Examination-Microscopical examination blood and droppings- Demonstration of different diagnostic procedures- Method of waste disposals - In ground pits, incineration, Composting, Rendering and Burial – Recycling of poultry wastes.

Lesson -4  CPHM-504  Medication and vaccination
Vaccination: Planning of Vaccination - Storage of vaccine - Successful vaccination procedure – Handling of vaccines - Method of vaccination – Stress alleviation- Schedule of vaccination for broilers, parent stock and layers – managerial and nutritional procedures to overcome diseases, Medication: Types of administration-general principles and precautions with emphasis on administering medication through water and feed; commonly used drugs in avian diseases.

Lesson -5  CPHM-505  Disinfection and biosecurity measures
Screening of visitors, foot baths, wheel dip, Vehicle Screening, prevention of predators and stray animals in farm premises - Disinfectants: Classification- Biological, Chemical disinfectants, Heat and Radiation - mode of action; recommended procedure; precaution and handling - Disinfestations: Dipping – Delicing - Deworming Schedules for Poultry – Down time – Cleaning and disinfection of house and equipment – Fumigation- Biosecurity - Proactive measures to minimize entry of infections in farm premises-farm fencing, disinfectant pits, personnel management restriction of movement etc. Avian welfare and behavior- Prevention and control of diseases.

CPHM: Practical Syllabus
Clinical methods of examination and Identifying the abnormalities - Abnormal body discharge - Post mortem examination – identification of affected parts in broilers - Cleaning of slides, glass wares and other laboratory equipment, techniques of staining and preparation of blood smears - Collection, preservation, fixation and dispatch of specimen material for laboratories examination – Microscope – Staining methods demonstration of different diagnostic procedures – Disinfection – sanitary measures – Cleanout procedures - Fumigation procedures – farm stay programme.