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DIPLOMA IN BROILER PRODUCTION AND MANAGEMENT

Curriculum & Scheme of Examination

Academic Year 2016-2017 onwards
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the Course</th>
<th>Total Marks</th>
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<tr>
<td></td>
<td><strong>SEMESTER I</strong></td>
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<tr>
<td>1</td>
<td>Growth of Poultry Industry</td>
<td>100</td>
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<tr>
<td>2</td>
<td>Chicken Basic Anatomy and Physiology</td>
<td>100</td>
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<td>3</td>
<td>Broiler Flock Health and Biosecurity</td>
<td>100</td>
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<td>4</td>
<td>Broiler Housing and Environment</td>
<td>100</td>
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<td>5</td>
<td>Broiler Management-I</td>
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<tr>
<td>6</td>
<td>Practical I</td>
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<td></td>
<td><strong>SEMESTER II</strong></td>
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<tr>
<td>7</td>
<td>Incubation and Hatchery Management</td>
<td>100</td>
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<td>8</td>
<td>Broiler Management-II</td>
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<tr>
<td>9</td>
<td>Broiler Nutrition and Feed Mill Technology</td>
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<td>10</td>
<td>Broiler Diseases</td>
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<td>11</td>
<td>Broiler Economics and Marketing</td>
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<tr>
<td>12</td>
<td>Practical II</td>
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<tr>
<td>13</td>
<td>In-Plant Training (3 months in Industry)</td>
<td>100</td>
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SEMESTER - I

1 – GROWTH OF POUlTRY INDuSTRIy

Total Marks: 100
Total Hours: 60

Objective:
To understand the poultry industry based on the past, present and emphasis of future growth. To study the statistical data and various functions involved in poultry industry.

UNIT-I
(12 HRS)

UNIT-II
(12 HRS)
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.

UNIT-III
(12 HRS)
Importance of Broiler and Layer production under Indian scenario - Poultry population and other Poultry related statistics, per capita meat and egg availability in India -different regions and States and in World.

UNIT-IV
(12 HRS)
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 and egg production.

UNIT-V
(12 HRS)
Regional influences, Structure of poultry industry – breeder farm, hatcheries, commercial farms, feed mills and processing industry. Backyard to industrial farming of poultry, future perspective and constraints of Indian poultry industry.

Text Book

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SEMESTER - I

2 – CHICKEN BASIC ANATOMY AND PHYSIOLOGY

Total Marks: 100 Total Hours: 60

Objectives:
To study the internal and external body parts of chicken for understanding the various functions. To examine birds for handling, selection, culling, judging and diagnosis of disease.

UNIT-I (12 HRS)
Introduction to Anatomy and Physiology. Integumentary parts of chicken - Feather patterns - feather tracts - feather sexing of day old chicks. Comb and its different types. Role of skin, scales, nails, plumage and beak. Physiological standards in poultry.

UNIT-II (12 HRS)
Respiratory system-anatomical structures-nasal cavity, larynx, syrinx, trachea, bronchi, lungs, air sacs- and its function, inhalation and exhalation process. Circulatory system-structure, functions of heart, types of blood vessels and components of blood.

UNIT-III (12 HRS)
Skeletal system-different types of bones-pneumatic, medullary, cervical, thoracic, fused, wing and limb bones. Excretory system-Role of kidney, ureter and cloaca.

UNIT-IV (12 HRS)

UNIT-V (12 HRS)
Nervous system - Endocrine system - Protein and steroid hormones-role of hypophysis, neurohypophysis, adernal glands, pancreas, testis, ovary and pineal gland. Immune system-definition, different organ and its functions - bone marrow, bursa of Fabricius, thymus, harderian gland, spleen, payers patches and gut associated lymphoid tissues (GALT).

Text Books


References
SEMESTER I

3 – BROILER FLOCK HEALTH AND BIOSECURITY

Total Marks: 100  Total Hours: 60

Objectives:
To make the student aware about the process and principle involved in the biosecurity aspects of poultry to have ethical rules and regulations and methods to maintain flock health.

UNIT I (12 HRS)
Vaccination principles, Broiler vaccination schedule - type, methods, and pre and post vaccination care, vaccination failure, Immunity.

UNIT II (12 HRS)
Medication - types of administration – general principles and precautions of medication through water and feed.

UNIT III (12 HRS)
Signs of disease – Measures to prevent disease outbreak – fly and rodent control – general farm hygiene – sanitization procedures – quarantine, isolation, shed cleaning and disinfection procedures.

UNIT IV (12 HRS)
Litter, carcass and hatchery waste disposal – Water sanitation – sanitizers, disinfection - types of disinfectants, mode of action, recommended procedure, precaution and handling.

UNIT V (12 HRS)
Biosecurity – Proactive measures to minimize entry of infection vs. agents, farm premises – farm fencing – disinfectant, pits, personnel management and restriction of movement – conceptual (isolation), structural and operational (sanitation) biosecurity in poultry farms.

Text Book

References
SEMESTER - I

4 – BROILER HOUSING AND ENVIRONEMENT

Total Marks: 100
Total Hours: 75

Objective:
To make the students aware about the basic concepts of poultry houses, their construction, materials for construction, equipments required for rearing and various automation techniques used in industry

UNIT-I

System of rearing - backyard system, semi-intensive system, intensive system – cage, deep litter and slat system, floor space, watering and feeding space requirements for different age groups under different rearing conditions.

UNIT-II

Selection of site and location of poultry farm – Importance of poultry housing and equipment. Principles of housing – location of poultry houses – basic principles of construction of poultry houses.

UNIT-III

Types of houses: Environmentally controlled houses and Open sided houses – deep litter, slat system, wire floor, cage houses and raised platform cage houses. Cages – types of cages – flat deck, Californian cages, “A” type cages, tier cages and furnished cages.

UNIT-IV

Fundamentals of ventilation-ventilation system – tunnel ventilation, duct ventilation and windowless house. Types of roof and materials used. Insulating materials for poultry houses-R-Value. Poultry farm equipments – brooding, feeding and watering equipments, nest boxes filler flats, vaccinators, dubbing, debeaking, and other equipments.

UNIT-V


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References

SEMESTER I

5 – BROILER MANAGEMENT - I

Total Marks: 100
Total Hours: 75

Objectives:

To make the student understand about the various brooding and rearing methods, feeding, watering and litter management and skills involved in broiler production.

UNIT I

(15 HRS)

System of rearing broiler – location, layout and design of broiler house – broiler farm equipment. Brooding and rearing of broiler – all in - all out and multiple batch system.

UNIT II

(15 HRS)

Preparation of house to receive day old chicks – litter material and deep litter management. Reception of day old chicks. Brooding, growing and finisher management. Lighting for broiler

UNIT III

(15 HRS)

Water quality and watering of broiler and water sanitation – management during seasons. Mash, crumble and pellet feeding of broiler – weekly growth rate, feed conversion and livability in broilers.

UNIT IV

(15 HRS)


UNIT V

(15 HRS)

Text Book

References

SEMESTER - I

PRACTICAL – I

Total Marks: 100

Objectives:
To understand the growth of broiler industry and their management.

1. Growth of poultry industry in India – flow chart
2. Broiler shed designs, layout and area calculation
3. Broiler equipments, feeder and drinker system
4. Water sample collection-pH and hardness measurement
5. Practical examination of dead bird – digestive, respiratory, circulatory and immune system.
6. Practical examination of dead bird – skeletal, excretory, male and female reproductive system
7. Biosecurity measures - Foot dip, vehicle, human spray and disinfectants (Demo)
8. Shed cleaning procedure – fumigation, floor, side wall, roof, pipeline, drinker and feeder cleaning, fly and rodent control measures and flame gun operation (Demo)
9. Brooding arrangements, day old chick weighment and CV% Calculation
10. Crop score assessment, weekly body weight monitoring and weak bird management
11. Types of litter materials – moisture, cost, merits and demerits and litter management.
12. Stocking density – floor, feeder and drinker space requirements for different age groups
13. Seasonal management and arrangements – summer, winter and monsoon
14. Broiler lifting, labour planning, weighment – Farm and Weighbridge
15. Vaccination & medication – route and dosage calculations
**SEMESTER II**

**6 – INCUBATION AND HATCHERY MANAGEMENT**

Total Marks: 100  
Total Hours: 60

**Objectives:**

To make the student study about the various types of incubation methods, conditions and equipments required at the breeder farm and hatcheries and develop skills for working as well as managing at different levels of hatchery for providing good hatchability.

**UNIT-I**  
(12 HRS)

Layout, design and location of hatchery; Methods of incubation; Physical requirements of incubation – collection, selection, cleaning and sanitation of eggs. Storage of hatching eggs – incubation methods – single and multistage incubators.

**UNIT-II**  
(12 HRS)

Hatchery operations – setting, transfer, hatching, pedigree hatching, chicks pull out, grading, packing and chick dispatch – In-ovo and in-hatch vaccinations and medications.

**UNIT-III**  
(12 HRS)

Incubation conditions for different species of poultry – Incubation periods and physical factors required for incubating eggs of various species – temperature, humidity, gaseous environment, position and turning of eggs.

**UNIT-IV**  
(12 HRS)

Role of computer in modern hatchery operations – quality control. Major cause of eggs failing to hatch – Post hatch break open study.

**UNIT-V**  
(12 HRS)


**Textbook**


**References**


**SEMESTER – II**

**7: BROILER MANAGEMENT – II**

Total Marks: 100  
Total Hours: 75

**Objectives:**

To make the students understand the fundamentals of broiler management and egg and meat processing and their products technology.

**UNIT-I**  
15 HRS

Litter materials and management, feeding and watering management – broiler management, lighting management, weak bird’s management, birds lifting and weighment.

**UNIT-II**  
15 HRS


**UNIT-III**  
15 HRS

Poultry meat processing - sorting, washing and cleaning of carcass, chilling, moisture absorption during washing and chilling, ice packing in boxes, processing of water fowl.

**UNIT-IV**  
15 HRS


**UNIT-V**  
15 HRS

Additional processed products - preparation of ready-to-cook, ready-to-eat chicken – deboning and cut up parts, preservation methods, packaging and storage. HACCP – Codex regulations.

**Textbooks**


**Reference Books**

SEMESTER II

BROILER NUTRITION AND FEED MILL TECHNOLOGY

Total Marks: 100
Total Hours: 75

Objectives:

To make the student to understand about the basic principles of nutrition and different kinds of feeds and their feeding methods in poultry.

UNIT-I

Nutrient requirements and feeding for broiler. Classification of feed ingredients—conventional feeds and non-conventional poultry feeds-energy sources, vegetable protein sources, animal protein sources.

UNIT-II

Feed ingredients, composition, feed storage technique—milling and quality control, processing of feed—types & forms of feeds—mash, pellet & crumble feed preparation and feeding methods. Feeding chicks, growers, layers, broiler and breeders—feeding in different seasons.

UNIT-III

System of feeding—restricted and controlled feeding—use of additives and non-additives—enzymes, probiotics, prebiotics and antibiotics, herbs, performance enhancers—Utilization of non—conventional feedstuff.

UNIT-IV

Feed mill design and equipments—feed production methods—grinding, mixing, condition, pelleting, crumbling, sieving process and premixing methods, feed storage—weighment—transport.

UNIT-V


Textbook

References


SEMESTER II

9 – BROILER DISEASES

Objective:

To make the student aware about the various pathogenic microorganisms affecting the poultry species, their route of entry, symptoms, diagnosis and various prevention and control measures.

UNIT I


UNIT II

Viral Diseases – etiology, host and transmission, signs, morbidity and mortality, gross lesions, diagnosis, treatment, prevention and control – ND or RD, IBD, IB, ILT, MD, LL, AI, AE, Fowl pox.

UNIT III

Bacterial diseases – etiology, host and transmission, signs, morbidity and mortality, gross lesions, diagnosis, treatment, prevention and control – Colibacillosis, CRD – Mycoplasmosis, Salmonellosis - Fowl typhoid, Pullorum disease, Fowl Cholera, Infectious Coryza and Omphalitis.

UNIT IV


UNIT V


Text Book
SEMESTER II

10 – BROILER ECONOMICS AND MARKETING

Total Marks: 100
Total Hours: 75

Objectives:
To impart the knowledge of various economic principles involved in poultry and the marketing strategies followed along with mathematical and statistical tools used in poultry.

UNIT I

(Econ ics of Poultry Production – Analysis of Production cost, Methods and criteria for cost calculation, broader economic framework for analysis. Marketing – Definition and Activities, Objectives of Poultry Marketing.

UNIT II

Marketing of Eggs, Organizational structure of egg marketing – NECC, ACIL, NAFED, Challenges and Suggestions. Marketing of poultry meat, Organizational structure of poultry meat marketing – BROMARK, BCC, NMPPB, Marketing channels for poultry meat, Challenges, Suggestions and Opportunities for Marketing of Poultry Products.

UNIT III

Broiler live bird marketing methods – Bird shrinkages and Transit loss problem – Broiler farm expenditure and maintenance – electrical bill, labour, litter materials and other miscellaneous. Broiler farm records and registers maintenance.

UNIT IV

UNIT V

(15 HRS)

Broiler production parameters (visual control system – Graph and Schedule display), Weekly, monthly, yearly and batch wise budget and report preparation.

Text Book


References


SEMESTER II

PRACTICAL II

Total Marks: 100

Objectives:

To enable the students to understand and have hands on experience in basic techniques involved in broiler management.

1. Hatchery visit – design, layout and equipments (Demo)
2. Farm visit – Breeder hatching eggs – collection, receipt from broiler breeder house, selection, rejection, grading and disinfection, flame gun operations procedure (Demo)
3. Candling, setting and transfer to hatcher – incubation operations and pull out
4. Day old chick sexing methods, fertile and total hatchability% calculation
5. Farm visit – Broiler farm design, layout, equipment, feeds and feeding practices (Demo)
6. Farm visit – Fumigation, Fly and rodent control measures (Demo)
7. Broiler management – brooding management, feeding and watering (Demo)
8. Feed mill visit – design, layout, equipments and feed manufacturing (Demo)
9. Feed consumption vs. weekly body weight measurement
10. Nutritive characteristics of Poultry Meat
11. Dressing of broiler – flow chart, Anti-mortem inspection and Post mortem examination, dressing percentage, calculation of bone-meat ratio, deboning and cut-up parts
13. Vaccination and medication – route and dosage calculation
14. Broiler economics – calculation – FCR, EEF, CFCR, day gain, lifting efficiency, mean age, Cost of production/one kg live body weight
15. Broiler production record, registers and visual control system – graph and schedule preparation

SEMESTER II

IN-PLANT TRAINING AND VIVA VOCE

Total Marks: 100

DIRECTIONS

- Students are allocated at different sectors of Poultry Industry located at different places of India. They will be assigned under a Farm supervisor in their location and will be doing the practical training work for a period of three months.
- The student should complete attendance for the period of their in-plant training, which will be sent by the Manager or Farm Incharge from their location.
- After three months the students will prepare an in-plant training project report which will be evaluated by the Faculty at the SIPM along with External Examiner.