

## DEPARTMENT OF VETERINARY SCIENCE

VLPM 111

Credits 3(2 + 1)

### INTRODUCTION TO ANIMAL HUSBANDRY

#### Theory

Introduction to animal husbandry and its importance to rural economy. Man and animal and their interrelationship. Common terms used for different species of livestock. Confirmation points used for different species of livestock. Breeds of different farm animals. Approaching and handling of farm animals. Methods of restraining domestic animals. Ageing and dentition of farm animals. Weighing of farm animals. Transportation of farm animals. Digestive system and digestion in farm animals. Reproductive system in farm animals. Housing and space requirement of farm animals. Water hygiene, ventilation, sanitation in animal house. Relationship between health and disease, methods of administration of medicines in animals. Emergency treatment in farm animals. List of pharmaceuticals used in animal-practice. Biotechnology application in animal husbandry. Application of computers in animal husbandry.

#### Practicals

1. Demonstration and practice of confirmation points in cattle and buffaloes
2. Demonstration and practice of conformation points in Sheep and Goat etc
3. Practice of approaching and handling of farm, animals
4. Study of livestock breeds
5. Identification in farm animals
6. Study of farm records and analysis
7. Study of dentition and ageing in farm animals
8. Study of digestive system of farm animals
9. Study of reproductive system in farm animals
10. Demonstration of medicine administration in animals
11. Demonstration and practice of restraining in farm animals
12. Identification and weighing of farm animals
13. Demonstration of medicines administration
14. Study of different animal housing systems
15. Visit to animal houses
16. Culling of unproductive animals

#### References

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|----|---|---|
| 1. | Farm Animal Management and Poultry Production | Sastry N S R Thomas C K and Singh R A 1992. Vikas Publishing House Private limited, New Delhi |
| 2. | A Text Book of Animal Husbandry               | Banerjee G C 1998. Oxford and IBH PUBLISHING Company Private limited, New Delhi.              |
| 3. | Practical Animal Husbandry                    | William Millen C and Robertson E D S 1945. Oliver and Boyd, Edinburgh, London                 |

**VLPM 121**

**Credits 3(2 + 1)**

### **DAIRY CATTLE PRODUCTION**

#### **Theory**

Vital statistics of cattle and buffaloes and importance of dairying. Selection of dairy cattle and different methods of selection. Breeding and different methods of breeding dairy cattle. Economic feeding of dairy cattle and thumb rules of feeding. Use of agro industrial by products in dairy cattle rations. Computation of economic ration for dairy animals. Feeding of dairy cattle during draught and scarcity periods. Raising and management of calves. Care and management of heifers. Care and management of pregnant animals. Care and management of bulls and work animals. Dry animal management. Dairy record keeping. Importance of artificial insemination in dairy animal production. Anatomy and physiology of mammary gland. Biosynthesis of milk. Milking programme and clean milk production. Milk marketing and pricing. Important diseases of dairy cattle and their prevention methods. Layout and housing management of dairy cattle, Effect of stress on dairy animal production and reproduction. Cost of calf rearing and milk production. Project proposals for starting dairy farm.

#### **Practicals**

1. Study of routine dairy farm operations
2. Selection and judging of dairy animals
3. Study of dairy breeds characters
4. Study of dairy farm records
5. Computation of economic rations for dairy animals
6. Demonstration of artificial insemination
7. Study of season evaluation

8. Practice of tagging, tattooing and branding in dairy animals
9. Study of vaccination schedule of dairy animals
10. Calf rearing methods
11. Study of clean milk production
12. Demonstration of hand milking practice
13. Demonstration of machine milking practice
14. Testing of milk for mastitis and adulterants
15. Visit to college dairy farm
16. Visit to private dairy farms

#### References

1. Principles and Practices of Dairy Farm Management Jagdish Prasad 2002. Kalyan Publishers, New Delhi
2. A Text Book of Animal Husbandry Banerjee G C 1998. Oxford and IBH Publishing Company Private Limited, New Delhi

**VLPM 211**

**Credits 3(2 + 1)**

### **MEAT ANIMAL PRODUCTION AND MANAGEMENT**

#### **Theory**

Production and population trends in meat animals in India. Breeds of sheep, goats and rabbits - their selection for meat, wool and fur production. Commercial breeds of swine - their selection for pork production. Preparation of sheep, goats, swine and rabbits for breeding season. Housing requirements of sheep, goats, swine and rabbits. Feeding-care and management of sheep, goats, swine and rabbits. Common diseases in sheep, goats, swine and rabbits and preventive measures. Production and management of animals for veal and carabeef. Preparation of project reports for sheep, goats, swine and rabbit units.

#### **Practicals**

- 1 & 2. Familiarization of sheep, goats, swine and rabbit breeds
3. Identification methods in sheep, goats, swine and rabbits
- 4 & 5. Judging of meat animals i.e, sheep, goats, swine and rabbits
- 6 & 7. Layout plans for establishing sheep, goats; swine and rabbit farms
- 8 & 9. Ration formulation for sheep, goats, swine and rabbits

10. Deworming and vaccination schedule of sheep, goats, swine and rabbits
11. Routine farm operations in sheep, goats, swine and rabbits farms
12. Familiarization of farm records maintained in sheep, goats, swine and rabbit farms
- 13 & 14. Preparation of project reports of sheep, goats, swine and rabbit units
- 15 & 16. Visit to sheep, goats, swine and rabbit farms

#### References

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|----|---|--|
| 1. | Goat, Sheep and Pig production and management | Jagadish Prasad 1999.<br>Kalyani Publishers, New Delhi                                     |
| 2. | The Science of Animal Husbandry               | James Blakely and David H Bade 1990<br>Reston Publishing Company<br>Incorporated, Virginia |
| 3. | Goat Production in the tropics                | Devendra C and Marka Buras 1983.<br>Common Wealth Agriculture Bureau,<br>U.K.              |
| 4. | Sheep and Goat science                        | M E Ensminger (6th edition) 1970.<br>International Book Distributing<br>Company, Ludhiana  |
| 5. | Sheep Production and Breeding                 | Arora C Land Garg R C 1998.<br>International Book Distributing<br>Company, Lucknow         |
| 6. | Sheep Production in tropics and Sub tropics   | Kaushish S K 1994. Scientific<br>Publishers, New Delhi                                     |

**VLPM 311**

**Credits 3(2 + 1)**

### **POULTRY PRODUCTION AND MANAGEMENT**

#### **Theory**

Poultry development in India-present status and its role in Indian economy. Breeds of poultry - classification - Commercial breeds, layers and broilers - economic traits. The digestive system, reproductive system and its functions. Selection, care of hatching eggs, incubation of hatching eggs, - requirements of incubation. Housing systems - cages versus deep litter system. Sanitation and disposal of wastes. Management of chicks, Growers, layers and broilers. Commercial aspects of egg production, broiler production and hatching egg production. Management of alternative species of poultry - Quail, duck, turkey etc - Feeds - feeding of poultry - Commercial feed formulations. Common diseases of poultry and their preventive measures. Marketing of poultry - Broilers - layers, eggs and alternative species. Processing of poultry

products, local and export marketing feasibility. Preparation of project reports - layer farm, Broiler farm, breeders farm, feed manufacturing unit, hatching unit and alternative species.

### **Practicals**

1. Handling of poultry - parts of fowl - demonstration
2. Poultry breeds – Familiarization
3. Poultry housing equipment – Familiarization
4. Sanitation and disinfection
5. Preparation of house and brooding of chicks
6. Management of incubation
- 7&8. Vaccination schedule and preventive measures
9. Layer and Broiler flock management - familiarization
10. Debeaking and its importance
- 11&12. Feed ingredients and formulation of rations for poultry
- 13&14. Visit to layer and broiler farms
15. Visit to feed mixing plant
16. Visit to commercial hatchery

### **References**

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|---|---|
| 1. Poultry                              | Banarjee G V 1995. Oxford and ISH Publishing Company, New Delhi |
| 2. Commercial chicken production manual | Bell D and North M O 1990. AVI Publishing Company, New York     |
| 3. Poultry Production                   | Singh R A 1996. Kalyani Publishers, Ludhiana                    |
| 4. Scientific Poultry Production        | Sreenivasaiah P V 1987. IBH Prakasan, Bangalore                 |

**VFPM 321**

**Credits 2(1+1)**

## **FISHERIES AND AQUACULTURE**

### **Theory**

Outline classification of fin fish and shell fish. General characteristics of fish and prawn. Anatomy and Biology of commercially important fishes. Breeding of cultivable fish and prawn. Fish and Fisheries of Indian rivers, lakes and seas, Inland and Marine fish production in India. Common fishing craft and gear of India.

Introduction to aquaculture. Types of aquaculture systems. Species

suitable for freshwater, brackish water and marine aquaculture systems. Fish farm construction. Ecology of fish ponds. Preparation and management of farm ponds. Different farming practices. Integrated aquaculture system. Fish and Prawn diseases and their control. Post-harvest handling of fish and prawn. Mechanism of fish spoilage. Principals involved in the preservation of fish by drying, salting, freezing and canning. Importance of value added fish products and byproducts. Quality evaluation of freshness of fish.

Economics of grow out farms and hatcheries. Marine and Inland fish marketing system in India. Export market of fish and fishery products. Role of cooperatives in marketing of fish and fishery products.

### **Practicals**

1. Identification of commercially important fresh water finfish
2. Identification of commercially important brackish water finfish
3. Identification of commercially important shell fish
4. Digestive system of fin fish
5. Reproductive system of male and female fin fish
6. Anatomy of shell fish
7. Collection & study of aquatic weeds and their control
8. Collection & study of aquatic insects & their control
9. Collection & study of predatory and weed fishes & their control
10. Collection & study of phyto plankton & zoo plankton
11. Breeding of Indian major carps
12. Determination of water quality parameters: Temperature, O<sub>2</sub>, CO<sub>2</sub> and pH
13. Feed formulation & its preparation
14. Preparation of value added fish products
15. Preparation of fish by-products
16. Ornamental fish & maintenance of aquarium

### **References**

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|---|------------------------------------|--|
| 1 | Fish Fisheries of India            | Jingran V G 1998. Hindustan Publishing Corporation, New Delhi            |
| 2 | Aquaculture-Principles & Practices | Pillai T V R 1996. Fishing News Books Limited, New Delhi.                |
| 3 | Fish Diseases                      | Shaperclaus W 1991. VoL.I& II, Oxxonian Press Private Limited, New Delhi |

4	Marine Fisheries of India	Bal D V and Rao V K 1990. Tata McGraw Hill, New Delhi
5	Water Quality in Ponds for Aquaculture	Boyd C E 1990. Alabama Agriculture Experimental Station, Auburn University, Alabama, USA
6	Post Harvest Technology of Fish & Fish Products	Balchandran K K 2001. Daya Publishing House, New Delhi
7	Processing Aquatic Food Products	Whaton F W and Lawson T B 1985. A.Wiley - Inter Science Publication, New York
8	Fisheries Economics	Jayaraman R 1996. Fisheries College & Research Institute, TNVASU, Tuticorin

### **VLPT 323**

**Credits 3(2 + 1)**

## **PROCESSING AND MARKETING OF LIVESTOCK AND AVIAN PRODUCTS**

### **Theory**

Classification and Physico - Chemical characteristics of Milk, Meat and Eggs. Nutritive values and role in Human Nutrition. Classification and Quality requirements of livestock food products for National and International markets in WTO regime. Special features and problems related to marketing of livestock and avian products

Selection and grading of Livestock and Avian produce for Marketing and processing as per WTO requirements. Processing methods employed for enhancing keeping quality and shelf life of different products made from Livestock and Avian produce - Chilling; Freezing; Heat processing by conventional, Dielectric and Microwaves; Radiation; Concentration; Dehydration; Freeze drying etc. Sensory evaluation, packaging and storage of livestock food products.

### **Practicals**

- 1-2 Analysis of Milk for major components
- 3-4 Identification, characterization and grading of eggs from different species
- 5-10 Testing Livestock and Avian produce for toxins, pesticides, heavy metals, preservatives etc
- 11-12 Sensory evaluation of Livestock food products
- 13-16 Visit to Dairy plants, Abattoirs, Meat and Poultry processing plants

### **References**

1. Food Science Potter N N 1990 AVI Publishing Company,  
West Port, Connecticut
2. Principles of Food Science M.Karel O R Fenemma and D B Lund  
Part-I & Part-II Marcel Dekkar Publishing Company, New  
York
3. Food Analysis Nielson S S As per publishers, Gaithery  
berg, Maryland
4. Engineering for Dairy and Farall A H Wiley Eastern Private Limited,  
Food Products New Delhi