JOB ROLE – ANIMAL HEALTH WORKER

Sector – Agriculture
(Qualification Pack Code: Ref.Id.AGR/Q4804)
Class X

PSS Central Institute of Vocational Education
Shyamla Hills, Bhopal – 462 013 , Madhya Pradesh, India

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UNIT 1: ASSISTING IN VETERINARY EXTENSION SERVICES

Session 1: Promotion of Technologies and Good Practices in Livestock Farming
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Session Objectives

The student will be able to:

➢ Describe the various technologies and practices such as farm practices, feed and feeding, disease prevention, farming system and animal waste utilization for enhancing the productivity and profitability of livestock farming.
Introduction

In India, livestock are reared mostly under traditional farming system whereas the world has greatly benefitted by adopting advancements in:

1. Feeds and feeding of animals,
2. Prevention of diseases in animals,
3. Adoption of advanced farming systems,
4. Optimum utilization of animal and disposal of farm wastes.
Technologies and Practices for Enhancement of Productivity and Profitability of livestock farming

Various technologies and practices for enhancement of productivity and profitability are:

- **Farm practices**
  - Maintenance of farm records
  - Clean milk production

- **Feeds and Feeding**
  - Balanced ration and
  - Utilisation of locally available feed material

- **Disease Prevention**
  - Vaccination
  - Deworming

- **Farming System**
  - Organic farming system
  - Integrated farming system

- **Animal Waste Utilization**
  - Biogas production
  - Vermicomposting
Technologies and Practices for Enhancement of Productivity and Profitability (continued…)

1. **Farm practices:** Maintenance of farm records, Clean milk production

2. **Feeds and feeding:**
   Balanced ration utilization of locally available feed material

3. **Disease prevention:** Vaccination
   Deworming

4. **Farming systems:**
   Organic farming system
   Integrated farming system

5. **Animal waste utilization:** Biogas production Vermicomposting
1. Farm Practices:
   i. Maintenance of farm records

Maintenance of farm records is one of the most important part of livestock management and serves the following purposes:

- Prove the ownership of animals
- Performance evaluation of farm
- Performance evaluation of individual animals
- Selection and culling of animals
- Future planning of the farm
- Perform financial analysis

Purpose of record keeping
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Farm records

- Inference can be drawn from the records
- Maintained in simple form
- Easy to keep
- Duplication must be avoided as far as possible
- Provide necessary information when required

Characteristics of good farm records
Types of farm record

Technical records
- Daily report register
- Artificial insemination register or service
- Calving register
- Daily milk yield register
- Feed stock register
- Feeding records
- Health records

Farm section records
- Fodder cultivation register
- Field register
- Labor register
- Muster roll
- Tractor logbook
- Machinery and equipment book

Financial records
- Store stock book
- Attendance and pay record
- Feed cost record
- Veterinary expenses
- Cost of fodder seeds
- Equipment purchase
ii. Clean Milk Production

Techniques of clean milk production

Clean milk is defined as milk drawn from the udder of healthy dairy animals, collected in clean milking pails, and free from unwanted objects like dust, dirt, flies, manure, etc.

Clean milk has a normal composition, possesses a natural flavor and is safe for human consumption.
Characteristics of good quality milk

- Feed from debris and sediments
- Free from bad flavour
- Should have normal composition
- Free from antibiotics and chemical residues
- Low bacterial count
Sources of contamination in milk

- Unclean milking parlor
- Contaminated feed and water
- Unclean milk storing vessels
- Unclean milking utensils
- Unclean animals
- Unclean hands of the milker

Animals with diseases

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Reasons for clean milk production

- Required for the production of dairy products
- Safe for human consumption
- Transportation of raw milk over long distance.
- Higher market value of milk
2. Feeds and feeding:

i. Balanced ration and utilization of locally available feed material:

• A ration is the amount of feed an animal receives for consumption in a 24-hour period.

• A ration is balanced when it contains all the essential nutrients needed by an animal in the right proportions.
Benefits of balanced ration

- Improved general health
- Increase in net daily income
- Improved reproductive efficiency
- Improved growth rate in heifers and calves
- Increased milk production
- Locally available feed resources at low cost

Benefits of balanced ration
3. Disease Prevention

i. Vaccination

- Vaccines consist of killed or weakened microbes that stimulate an animal’s immune system.

- When injected into the animal, these microbes do not produce that particular disease. Instead, their presence in the animal’s body naturally starts boosting the animal’s immune system.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Primary Vaccination</th>
<th>Booster</th>
<th>Re-Vaccination</th>
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<tbody>
<tr>
<td>Foot and Mouth Disease (FMD)</td>
<td>4 months of age and above</td>
<td>6 months after first dose</td>
<td>Biannual</td>
</tr>
<tr>
<td>Hemorrhagic Septicemia (HC)</td>
<td>6 months of age and above</td>
<td>........</td>
<td>Annual</td>
</tr>
<tr>
<td>Black Quarter (BQ)</td>
<td>6 months of age and above</td>
<td>........</td>
<td>Annual</td>
</tr>
<tr>
<td>Anthrax</td>
<td>6 months of age and above</td>
<td>........</td>
<td>Annual</td>
</tr>
<tr>
<td>Brucella (once in a lifetime)</td>
<td>4-8 months of age only in female calves</td>
<td>........</td>
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ii. Parasite Control

Parasite control programme mainly focuses on two areas:

- a) control of ecto-parasites (external parasites)
- b) control of endo-parasites (internal parasites)
4. Farming Systems

i. Organic Livestock Farming:

- It is a system of livestock production that promotes the use of organic and biodegradable inputs from the ecosystem in all areas of animal production.
- It promotes natural breeding methods, minimize stress, prevent diseases and avoids allopathic veterinary.
Major areas of organic livestock production

- Balanced diet prohibits the use of synthetic growth promoters
- Prohibits genetically engineered products
- Prohibits the use of prophylactic antibiotics
- More emphasis on animal welfare and minimum stress
- Fodder grown without the use of chemical fertilizers or pesticides
### Different Stages in organic livestock production

<table>
<thead>
<tr>
<th>Stage</th>
<th>Steps</th>
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| Soil Fertilization     | • Application of farmyard manure  
                         | • Application of vermicompost                                        |
| Fodder Production      | • Proper crop rotation  
                         | • Use of seeds free from chemical treatments                         |
| Rearing Animals        | • Optimum housing environment  
                         | • Animal maintained under natural breeding  
                         | • Ayurvedic and homeopathic treatment  
                         | • Welfare of the animals                                             |
| Animal Products        | • Processed and preserved in a natural way  
                         | • No addition of preservatives, colors and preservatives             |
ii. Integrated Livestock Farming

Involves simultaneous farming of crops, animals and fish together in a synergistic way, which results in greater total output than the sum of their individual output.

- Provides regular, round the year income
- Recycles agricultural residues/by-products
- Increases efficiency of land and labour
- Reduces cost of production
- Minimum environmental pollution as by-products (wastes) are utilised
5. Animal waste utilization

A large volume of organic matter, generated from livestock farms is dumped locally, which emits a foul smell and pollutes the soil and water. Therefore, emphasis is placed on proper utilization of waste.

i. Biogas Production

Biogas is a mixture of various gases produced by the breakdown of organic matter in anaerobic conditions (absence of oxygen) Manure generated at the livestock farm can be used as raw material for biogas production.

- Biogas can be produced in a biogas plant. Biogas is an odorless and colorless gas and is about 20 per cent lighter than air and has an ignition temperature in the range of 650° to 750°C.
Biogas can be produced in a biogas plant

- A biogas plant produces biogas and slurry. Biogas slurry is a good quality organic fertilizer

Uses of Biogas

- Cooking can be done through biogas.
- Lighting can be done
- Power generation
ii. Vermicomposting

• It is the use of earthworms for composting organic waste into humus-like material.

• Earthworms can consume organic matter almost equivalent to their body weights.

• *Eisenia fetida* and *Lumbricus rubellus* (red worm) species of earthworms are commonly used for vermicomposting.
Summary

In this session you have learnt about the various body parts of cattle and purposes of handling the farm animals.
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