

ARULMIGU PALANIANDAVAR ARTS COLLEGE FOR
WOMEN

(AUTONOMOUS)

P.G DEPARTMENT OF ZOOLOGY

LEARNING RESOURCES

DAIRY FARMING

Dairy Farming

Definition

Dairy farming is the practice of raising and managing cattle for the production of milk and other dairy products. This agricultural branch involves the breeding, feeding, and maintenance of dairy cattle to ensure the efficient production of milk, which is processed into various products such as cheese, butter, yogurt, and more.

Scope of Dairy Farming

- **Economic Contribution:** Dairy farming significantly contributes to the agricultural economy, providing livelihoods to millions of farmers globally.
- **Nutritional Value:** Dairy products are a major source of essential nutrients like calcium, protein, and vitamins.
- **Employment:** The dairy industry provides numerous job opportunities, from farm workers to processing and distribution roles.
- **By-products:** Utilization of by-products such as manure for bioenergy and organic fertilizers enhances farm sustainability.

Maintenance of Cattle

Proper maintenance of dairy cattle is crucial for high productivity and animal welfare. Key aspects include:

1. Housing:

- **Comfortable and Clean Environment:** Adequate space, ventilation, and sanitation to prevent diseases.
- **Proper Bedding:** Use of materials like straw, sand, or rubber mats to ensure comfort.

2. Feeding:

- **Balanced Diet:** Provision of a balanced diet that includes roughage (hay, silage), concentrates (grains, protein supplements), and minerals.
- **Access to Clean Water:** Continuous access to fresh, clean water is essential.

3. Health Care:

- Regular Veterinary Check-ups: Routine health checks, vaccinations, and treatments for parasites.
- Disease Prevention: Implementing biosecurity measures to prevent the spread of diseases.

4. Milking Practices:

- Hygienic Milking: Ensuring milking is done hygienically to prevent contamination.
- Regular Milking Schedule: Maintaining a consistent milking schedule to optimize milk production.

Techniques Adapted in Cattle Breeding

Effective breeding techniques are employed to enhance the genetic quality and productivity of dairy cattle. Key techniques include:

1. Selective Breeding:

- Choosing Superior Animals: Breeding animals with desirable traits to produce offspring with improved characteristics.

2. Artificial Insemination (AI):

- Semen Collection and Storage: Collecting and storing semen from superior bulls.
- Insemination Process: Introducing semen into the reproductive tract of cows to achieve pregnancy.

3. Embryo Transfer:

- Superovulation and Embryo Collection: Inducing cows to produce multiple eggs, collecting the embryos, and transferring them to surrogate mothers.

Breeding Strategies

1. Outbreeding:

- Definition: Mating of unrelated or distantly related animals within the same breed.

- Advantages: Enhances genetic diversity, improves vigor and productivity, and reduces the chances of inherited disorders.

2. Crossbreeding:

- Definition: Mating of animals from different breeds to combine desirable traits from both breeds.
- Advantages: Increases hybrid vigor (heterosis), improves overall performance, and can result in cattle with better adaptability and productivity.

3. Artificial Insemination (AI):

- Advantages:
 - Genetic Improvement: Access to superior genetics from top-quality bulls worldwide.
 - Disease Control: Reduces the risk of sexually transmitted diseases.
 - Cost-Effective: Economical alternative to maintaining a herd of bulls.
- Procedure:
 - Estrus Detection: Identifying cows in heat (estrus) for timely insemination.
 - Semen Handling: Proper thawing and handling of frozen semen.
 - Insemination Technique: Skilled technique to deposit semen in the reproductive tract.

Dairy Breeds: Key Cattle Breeds and Their Characteristics

Milch Breeds

Milch breeds are cattle primarily raised for milk production. They have traits that enhance their ability to produce high quantities of milk.

Sindhi (Red Sindhi)

Origin: Sindh province, Pakistan

Characteristics:

- Color: Typically red, with shades ranging from dark red to yellowish-brown.
- Size: Medium-sized animals.
- Milk Production: Known for good milk yield, averaging around 1500 to 2000 liters per lactation.
- Adaptability: Highly adaptable to hot climates and resistant to tropical diseases.
- Temperament: Generally docile and easy to handle.



Dual Purpose Breeds

Dual-purpose breeds are versatile cattle that are used for both milk production and draft work.

Ongole

Origin: Ongole region, Andhra Pradesh, India

Characteristics:

- Color: White or gray, with a hump and a large dewlap.
- Size: Large and sturdy build.
- Milk Production: Moderate milk yield, suitable for both milk and meat.
- Draft Power: Strong and muscular, making them excellent for plowing and other farm work.
- Adaptability: Well, adapted to tropical climates and resistant to various diseases.
- Temperament: Generally calm but can be aggressive under stress.



Draught Breeds

Draught breeds are cattle primarily used for heavy labor, such as plowing fields and transporting goods.

Kangayam

- Origin: Tamil Nadu, India
- Characteristics:
- Color: Gray or white, with black markings on the head and neck.
- Size: Medium to large, with a strong and compact build.
- Draft Power: Known for their strength, endurance, and capacity to work long hours.
- Milk Production: Low milk yield, primarily used for labor.
- Adaptability: Adapted to hot, arid climates and resistant to local diseases.
- Temperament: Docile and easy to manage.



Exotic Breeds

Exotic breeds are cattle introduced from other countries, often for improving local breeds or boosting productivity.

Jersey

Origin: Jersey Island, UK

Characteristics:

- Color: Light brown, with variations ranging from gray to a dull black.
- Size: Small to medium-sized.
- Milk Production: High milk yield with rich butterfat content, averaging around 5000 to 6000 liters per lactation.
- Adaptability: Well-suited to temperate climates; can adapt to various environments with proper care.
- Temperament: Gentle and easy to handle.
- Other Traits: Early maturity and efficient feed conversion.

