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**Refresher Training Workshop on Feeds,
Forage for Dairy Development**

27 and 28 March 2023, Addis Ababa

**Overview of Dairy Breeding
and Animal Health
Management**

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Learning Objectives

- An overview on dairy cattle genetic improvement, the status, major challenges and required interventions in Ethiopia,
- Highlights the major animal health conditions and services in livestock production focusing on dairy in Ethiopia

Dairy Cattle Breeding

The purpose of breeding dairy cattle and many other animals may have several objectives.

Breeding in dairy cattle has usually different purposes

- Milk production
- Calving interval
- Mothering ability
- Growth rate
- Age at first calving

Indigenous Cattle Breeds of Ethiopia

There are 28 indigenous breeds/types of cattle that have been recognized to exist in Ethiopia

Few of them are widely utilized as dual-purpose animals and commonly crossbred with exotic dairy breeds

Borena, Fogera, Begaite, Horro, Arsi, etc

The most widely exotic breed used in Ethiopia are

Holstein Frisian and Jersey



Common Breeding Services in Ethiopia

Breeding services in dairy cattle are commonly done in two ways

1) **Bull Service**

2) **Artificial Insemination (AI)**



Artificial Insemination (AI)

What is "Artificial Insemination" (A.I) ?

It is different from natural mating.

Artificial insemination is the technique in which **semen with living sperms** is **collected from the male** and introduced into female reproductive tract (uterus) at **proper time** with the help of instruments.

It is widely used in dairy cattle breeding,

could also be used in many other animals including, sheep, goats, horses, poultry, dogs, etc.

Artificial Insemination (AI)

Advantage of AI over natural mating?

- No transmission of reproductive diseases and injuries
- Artificial Insemination may be **cheaper** than keeping a herd bull.
- One portion of semen (ejaculate) from one bull can be divided into enough doses to inseminate 200-250 cows. In natural mating, one bull can serve only about 30 cows per year. AI transfers the genes from a good bull to a large number of offspring and breed improvement takes place much more quickly than in natural mating.
- Easy to transport for long distance
- Could be stored for many years for breeding purposes

Artificial Insemination (AI)

Disadvantage of AI ?

- Heat must be accurately detected.
- Require well trained technicians to conduct AI
- Lower conception rates compared to natural mating.

Major inputs and instruments used

- Selected bulls
- Semen collection facilities
- Semen evaluation and processing facilities
laboratories
- Semen storage jars
- Liquid nitrogen
- Artificial inseminating kits

AI service delivery situation in Ethiopia

- In many highland and dairy potential areas dairy production using crossbred animals are rapidly expanding
- However, crossbred heifers and cows are not easily available and prices are very high
- On the other hand, AI service delivery is not available or very poor in most of the areas
- AI services are relatively better in urban and peri-urban areas
- Smallholder farmers are using bull services, which have several problems

AI service delivery situation in Ethiopia

The major challenges of AI service delivery

1. Inadequate number of AI technicians
2. Lack of proper skills of AI technicians
3. Problems of input supplies specially consumables
4. Critical shortage of **Liquid Nitrogen**
5. Inadequate transport facilities such as motorbikes and AI kits for AI technicians
6. Poor means of communication with farmers
7. Poor farmers skills in heat detection and related things including silent heat

Required future interventions to improve AI service delivery

- Capacity development of existing and additional new AI technicians
- Awareness creation and capacity development of smallholder dairy producers in dairy breeding
- Establishment of new **Liquid Nitrogen plants** with higher capacities in different strategic locations
- Improve supply of consumables and different facilities for efficient AI service provision
- Sustainable AI delivery scheme development
- Establishment of Bull Service station in remote and areas where AI service is a problem

Overview of Dairy Animal Health

Health management is one of the most important factors influencing the development of dairy cattle industry in Ethiopia

- It affects the productivity and profitability of the farm
- It affects the safety and welfare of the animals
- It affects the food safety and health condition of human being
- Zoonosis is becoming the health concern of the world
- Therefore, keeping the animal's health is very important



Major health problems of dairy animals in Ethiopia

a) Infectious diseases

- Anthrax, Black leg, Pneumonic Pasteurellosis, Foot and Mouth Disease (FMD), Lumpy Skin Disease, and Tuberculosis.



b) Calf diseases - Diarrhea, Pneumonia

c) Diseases of Reproductive system

- Mastitis, Abortion,, Brucellosis, Retained placenta

d) Metabolic disorders

- Bloat, Acidosis, Ketosis, Milk fever

e) Parasitic infestation

- External parasites, - Internal parasites



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Prevention and controlling practice for most common dairy animal diseases

1) Proper husbandry practices

- Proper housing,
- Regular cleaning of barns
- Periodical washing of animals
- Regular supervision of animals
- Hoof trimming and dehorning



2) Appropriate feeding and nutritic

- Animals should be fed safe and quality feeds
- Animals need to be fed based on requirements
- Malnourished animals are susceptible for many diseases
- Minerals and vitamins are very crucial to make animals tolerant to different diseases
- Pregnant animals should be fed properly



Prevention and controlling practice for most common dairy animal diseases

3) Improved grazing land management to control disease and parasites

- Paddocking,
- Resting grazing lands
- controlled burning, etc



4) Regular Vaccination for major infectious diseases

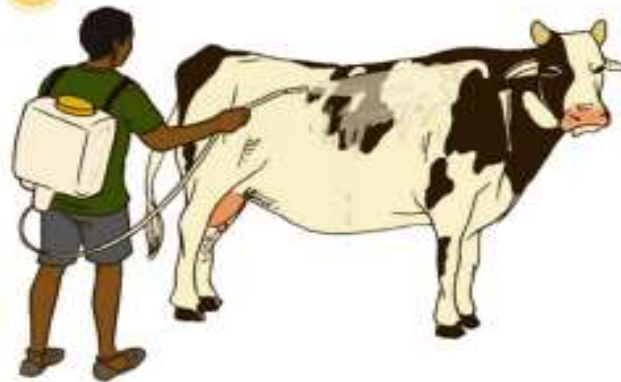
- Most of the vaccinations are provided annually
- Anthrax, black leg, lumpy skin diseases
- Bovine pasteuroloosis, FMD
- Contagious Bovine Pleuropneumonia



Prevention and controlling practice for most common dairy animal diseases

5. Periodical deworming and Deeping

- **Deworming** for internal parasites need to be made - the frequency and season should be based on the local situations
- **Deeping or spraying** should be made periodically to control external parasites specially **Ticks** are known to transmit many diseases



Animal health services in Ethiopia

- The country produces adequate number of vaccines for major diseases at NVI
- Quite good number of trained animal health workers
- Almost in all regions there are revolving fund accounts for animal health services
- The national animal health strategies and plans are very good
- **However, animal health services and vaccinations are far below the need of the producers in the country**



Livestock products safety and hygiene

Most of the animal health problems have direct or indirect effects on the products (milk and meat) quality / hygiene and human health.

- Low productivity and poor in quality
- Some diseases are fatal such as anthrax, when products like meat is consumed by human beings
- Others causes diseases when consumed raw, like TB (Tuberculosis)



Livestock products safety and hygiene

To produce safe and healthy dairy and meat products animals should be managed healthy

During milk production

- Milking should follow hygienic procedures
- Milk containers should be safe & recommended types
- Transportation should be hygienic and need to have cold chains
- Processing, packaging and marketing need to follow hygienic procedures

The government regulatory system and related development actors should support this activities



Livestock products safety and hygiene

It is also important to note the safe production and processing of meat

- Slaughter only healthy animals
- Slaughtering need to be in designated slaughterhouses
- Meat processing transporting should be handled properly and need to follow cold chains
- Meat marketing in butcher houses should be hygienic

The government regulatory system and related development actors should support this activities



Takeaway messages

- The current animal breeding service provision is inadequate; hence it has to be improved to address the major constraint of dairy producers in the country
- Dairy production is emerging as a market-oriented system and there are different initiatives by the government this has to establish a system that sustainably works in the country
- Animal health is economically very important for dairy producers. Therefore, this has to be improved to increase production of safe and quality milk and meat
- The concept of one health to address the problem of zoonosis in human and livestock production should be well addressed and promoted.

Acknowledgement

We acknowledge the funding from the USAID in Washington to the Africa RISING project in the Ethiopian Highlands, the International Development Association (IDA) of the World Bank to the Accelerating the Impact of CGIAR Climate Research for Africa (AICCRA), funders for the Mixed Farming Systems Initiative and the African Development Bank (AfDB) for the Technologies for African Agricultural Transformation (TAAT).

