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MINISTRY OF AGRICULTURE

Veterinary Public Health Extension Package (Volume I)

For Training of Farmers /pastoralists/

LOWLANDS

FSRP FOOD SYSTEM RESILIENCE PROGRAM
Food System Resilience Program

IFAD
Investing in rural people

Gender Transformative Mechanism

PSNP
Productive Safety Net Programme

June 2025
Addis Ababa, Ethiopia

"Healthy Animals, Healthy Families, Better Tomorrows"

Veterinary Public Health Extension Package (Volume I)

June 2025
Addis Ababa, Ethiopia

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Document Title: Veterinary Public Health Extension Package

Document Type: Package

Prepared By: Livestock and Fishery Development Extension, Ministry of Agriculture, Ethiopia

Date of First Issue: June 2025

Version Number: V1.0

Recommended review cycle: Every 3 years

Distribution List: All livestock sector lead executives at MoA, Regional Agriculture Bureaus, Partner non-governmental organizations, National Livestock Services

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MoA: Ministry of Agriculture
AHE: Animal Health extension
FNO: Food and Nutrition office
ILRI: International Livestock Research Institute
VPH: Veterinary Public health
EAA: Ethiopian Agricultural Authority

Acknowledgement

We would like to express our sincere appreciation to **team of technical experts** whose technical expertise and content development support greatly enhanced the scientific accuracy and practical value of the extension package. We are particularly thankful to the distinguished members of the drafting team, whose expertise and hard work have been vital in shaping this guideline. Special thanks go to **Professor Kebede Amenu (ILRI)** for providing special guidance and expert advice, which helped shape the package's structure and approach in alignment with field needs. We would like to express our sincere appreciation to **team of technical experts** participated in development of this program. We are also grateful to **Animal Health and veterinary public health lead executive officer and head of desk, Livestock sector state Minister Advisor,** whose leadership and strategic guidance ensured the successful coordination and timely completion of this work. Appreciation is extended to team of experts from different organizations, academic institutions and associations including International Livestock Research Institute, **UNIDO Regional Office Hub- Ethiopia, Mekelle University, Ethiopian Veterinary Association, GIZ, FAO-Ethiopia, SNV-Ethiopia, SPANA-Ethiopia** and representatives from regional and Federal agricultural office for their active engagement in stakeholder consultations and validation processes, which strengthened the contextual relevance and applicability of the Program. W would also like to acknowledge the financial support provided by Food System Resilience Program (FSRP), Low lands Livelihood Resilience Project (LLRP), Productive Safety Nets Project (PSNP), Livestock and Fishery development Project (LFSDP) and PACT Ethiopia.

Livestock and Fisheries development Extension Lead Executive

Ministry of Agriculture

Preface

For the development of this Veterinary Public Health Extension Package, experts from the Ministry of Agriculture (livestock extension, animal health and veterinary public health) and Ethiopian Agricultural Authority drafted the original version. Further inputs were obtained in the form of stakeholder consultation or individual contributions of experts. The package is divided into three modules organized taking into account the important animal health and production issues in the context of Ethiopia. We hope that the package can be used as standardized resource designed to support field veterinarians, animal health assistants, community animal health workers (CAHWs), and other development agents involved in animal health extension or related activities across Ethiopia. It provides practical and accessible guidance on the control and prevention of zoonotic diseases, and safe handling of animal source foods for Farmers /pastoralists/ and pastoral community. By improving veterinary public health practices, this extension package is expected to contribute significantly to improved prevention of zoonotic diseases and enhanced food safety, and overall economic growth in Ethiopia. We hope that the package will be translated into different languages for wider uses. Comments and suggestions are welcomed.

Livestock And Fishery Development Lead Executive

Ministry of Agriculture

Training guide and methodology

Learning time and duration:

- Duration of training is based on the content of each topic, as indicated in ‘overview part’.
- The training should be given when animal owners are free to attend the training or active to adopt the methods

Learning method:

- Interactive discussions
- Conversations/experience sharing among Farmers /pastoralists/
- Storytelling
- Group discussion
- Practical demonstration or pictures or video

Extension Provider:

- Vets, CAHWs, animal health workers, Private and NGOs

Venue of training:

- The training place may vary based on the local context.
- Can be given at; training centers (Farmers/pastoralists), Veterinary clinic, at social gatherings in the village or at farm

Target beneficiary:

- Smallholder Farmers /pastoralists/, pastoralists, livestock producers in urban and pre-urban areas

Training requirements:

- Disease leaflets, pictures, video (if possible),
- Brochures and posters (recommended)

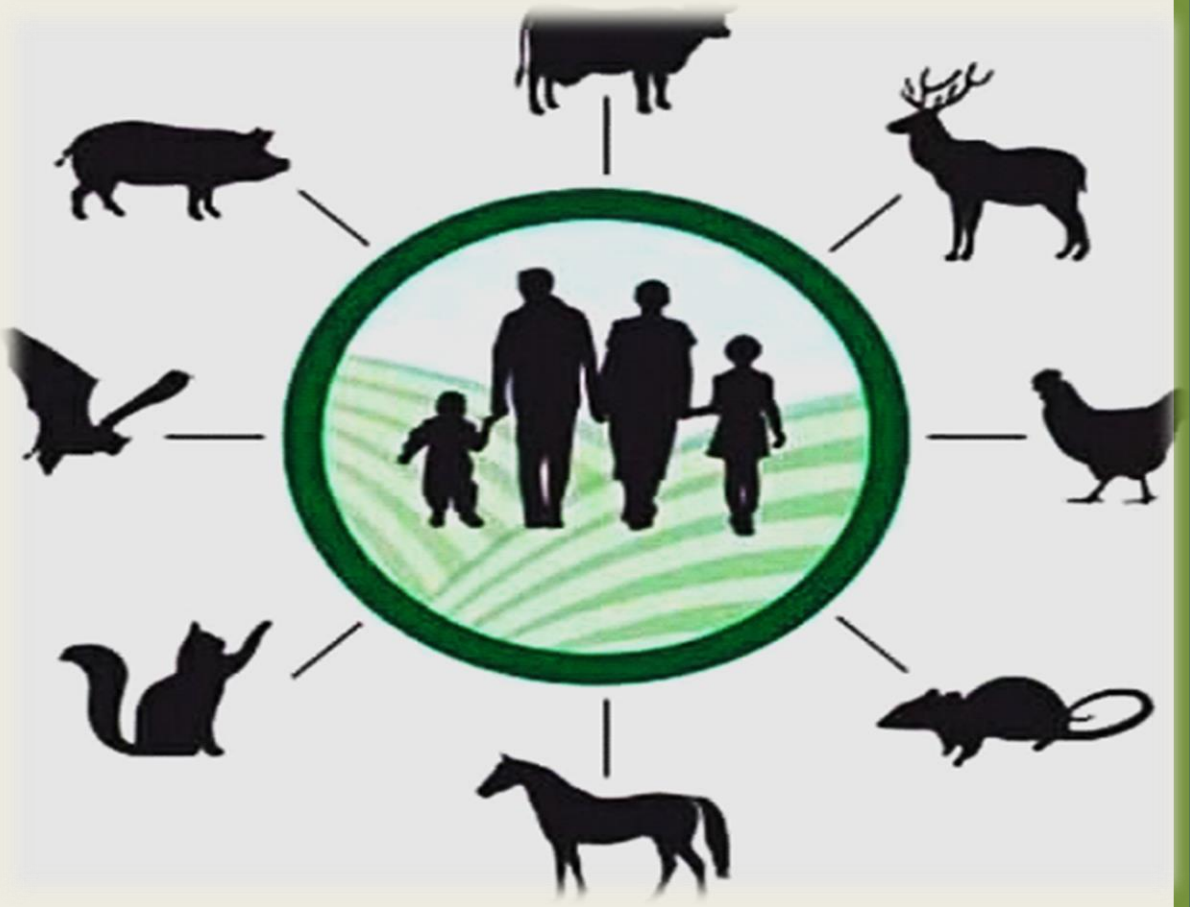
Package components

Module 1: Prevention and control of zoonoses

Module 2: Animal source foods food safety

Module 3: Rational use of veterinary drugs and prevention of antimicrobial resistance

Module1:
Prevention and control of zoonoses



Overview of Module1

- Zoonotic diseases are illnesses that can pass from animals to people. If not prevented, these diseases can seriously affect our health and income.
- This training will give clear and easy-to-understand information on what causes these diseases, how they spread, what signs to look for, and how to prevent and control them—especially for smallholder Farmers /pastoralists/ and local livestock producers.

Note: Face to face training of this module may be completed within 1 to 2 hours

Instruction to the Trainer

- *Provide briefly explain about the package*
- *Complete this within maximum of 3 minutes.*

Welcoming and introduction

Welcoming

- Name and role of the trainer (s)
- Name and address of the trainees
- Number and species of livestock owned

Learning objectives

At the end of this session trainees will be able to:

- ✓ Know what zoonotic disease means
- ✓ Aware about major zoonotic diseases
- ✓ Obtain clear information about the public health and economic impacts of zoonotic diseases
- ✓ Understand on the cause, transmission, signs and prevention and control methods of major zoonotic diseases in the context of Ethiopia

Instruction to the Trainer

- *Please politely and warmly provide greetings to the animal owners and clearly introduce your self (name and your work).*
- *Ask all the trainees to introduce themselves (name and specific address),*
- *Ask Farmers /pastoralists/ what they expect from the training and what they hope to change due to the training.,*
- *On a flipchart, write down Farmers /pastoralists/' expectations and intentions to apply the training.*
- *Then, briefly explain the training objectives and approach of the training.*

Pre-training questions

Indicate whether the following statements are TRUE or FALSE

1. Some diseases in humans can come from animals.
2. People can get sick from touching or being bitten by animals.
3. Eating raw or undercooked meat, milk, or eggs from animals can sometimes cause illness.
4. Zoonotic diseases can reduce a family's income if a sick person or animal cannot work or produce food.
5. Communities can prevent zoonotic diseases if they have proper knowledge and take precautions.

Instruction to the Trainer

- *Test the awareness level of Farmers /pastoralists/ about zoonoses using the quiz questions*

What are zoonotic diseases?

- ✓ Zoonotic diseases are infectious diseases that can be transmitted from animals to humans or vice versa.
- ✓ Zoonoses cause serious economic and public health impacts

What are the causes of zoonotic diseases?

- ✓ They are caused by disease causing organisms, such as viruses, bacteria, parasites and fungi.

How zoonotic diseases transmit?

- ➢ Zoonotic diseases can be transmitted through :

- Contact with infected, biting
- Ingestion of contaminated food and water
- Consumption of raw meat, milk, blood, etc.

Instruction to the Trainer

- Ask Farmers /pastoralists//pastorals/ to identify local disease causing and transmission ways
- Ask Farmers /pastoralists/ to know the habit of consuming raw animal source foods

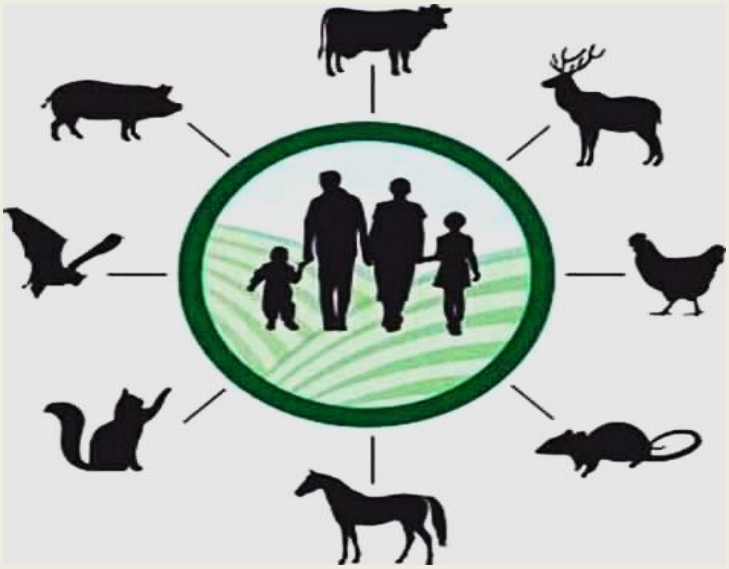
What are preventive measures of zoonoses ?

- Use separate house for humans and animals
- Use thoroughly cooked animal products
- Keep personal & environmental sanitation
- If you encounter new and strange disease signs, report to the nearby animal and human health workers
- Accept and practice the health professional's advice

Instruction to the Trainer

- Discuss with the trainees what they take an action if they encounter strange diseases'
- Ask Farmers /pastoralists/ whether they use separate house for humans and animals

What are common zoonotic Diseases?



- Rabies
- Anthrax
- Brucellosis
- Bovine Tuberculosis
- Avian Influenza

Instruction to the Trainer

- Discuss with the trainees what they take an action if they encounter strange diseases'
- Ask Farmers /pastoralists/ whether they use separate house for humans and animals

1. Rabies

What is rabies?

- ✓ Rabies is a disease affects animals and humans caused by virus
- ✓ Once symptoms appear, rabies always causes death.
- ✓ But rabies is completely preventable — by vaccinating dogs and other animals.

What cause rabies ?

- ✓ Rabies is caused by a virus found in the saliva of infected animals.
- ✓ The virus enters the body through a bite or scratch.
- ✓ The virus attacks the brain and nervous system, and this leads to death if not treated early.

Instruction to the Trainer

- *Please ask owners about the impact of rabies*
- *Record their response on flip chart*
- *Then explain the detail of economic and public health impact of the diseases*

Rabies

Signs of Rabies

- Becomes very aggressive and may bark unusually
- Eyes wide open (pupils look large)
- Acts restless, confused, or overly alert
- Bites or chews its own teeth, feet, or body parts
- Loses fear and tries to attack other animals or people
- Moves around a lot, even during the day
- Swallows strange things like poop, straw, sticks, or stones





Instruction to the Trainer

- *Show and explain about the picture*
- *Record their response on flip chart*

Rabies

Signs of Rabies



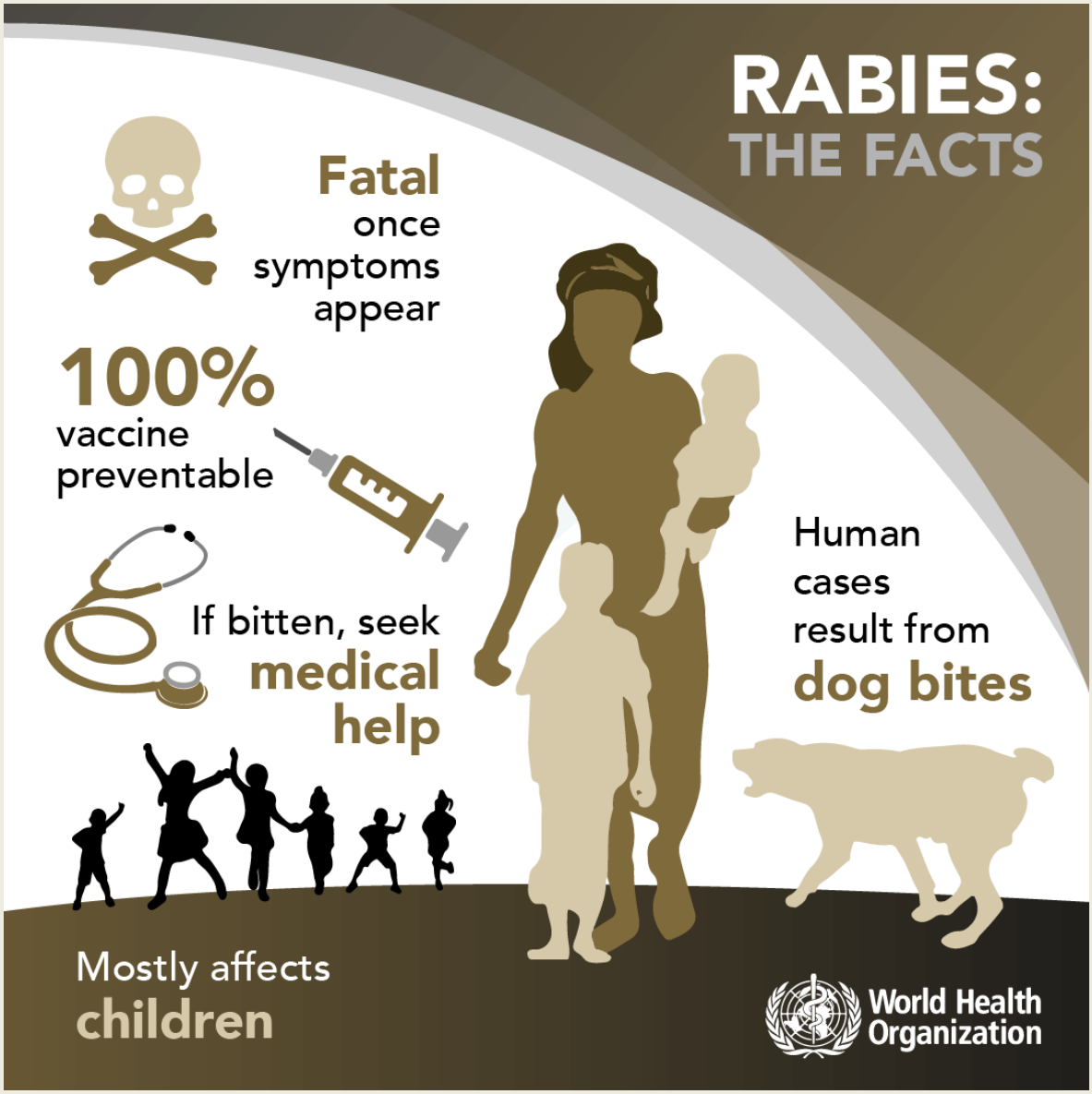
- Weakness in the throat and jaw muscles
- Lower jaw hangs down
- Difficulty swallowing and lots of drooling
- As the disease gets worse, the whole body becomes paralyzed, leading to coma and then death



Instruction to the Trainer

- *Discuss and tell to the trainee NOT to rely on self- treatment and do not seek traditional healers*
- *Explain what action should the trainee take if they encounter rabies suspect animal like report to local authorities or animal health experts and not approach or attempt to handle stray animals*

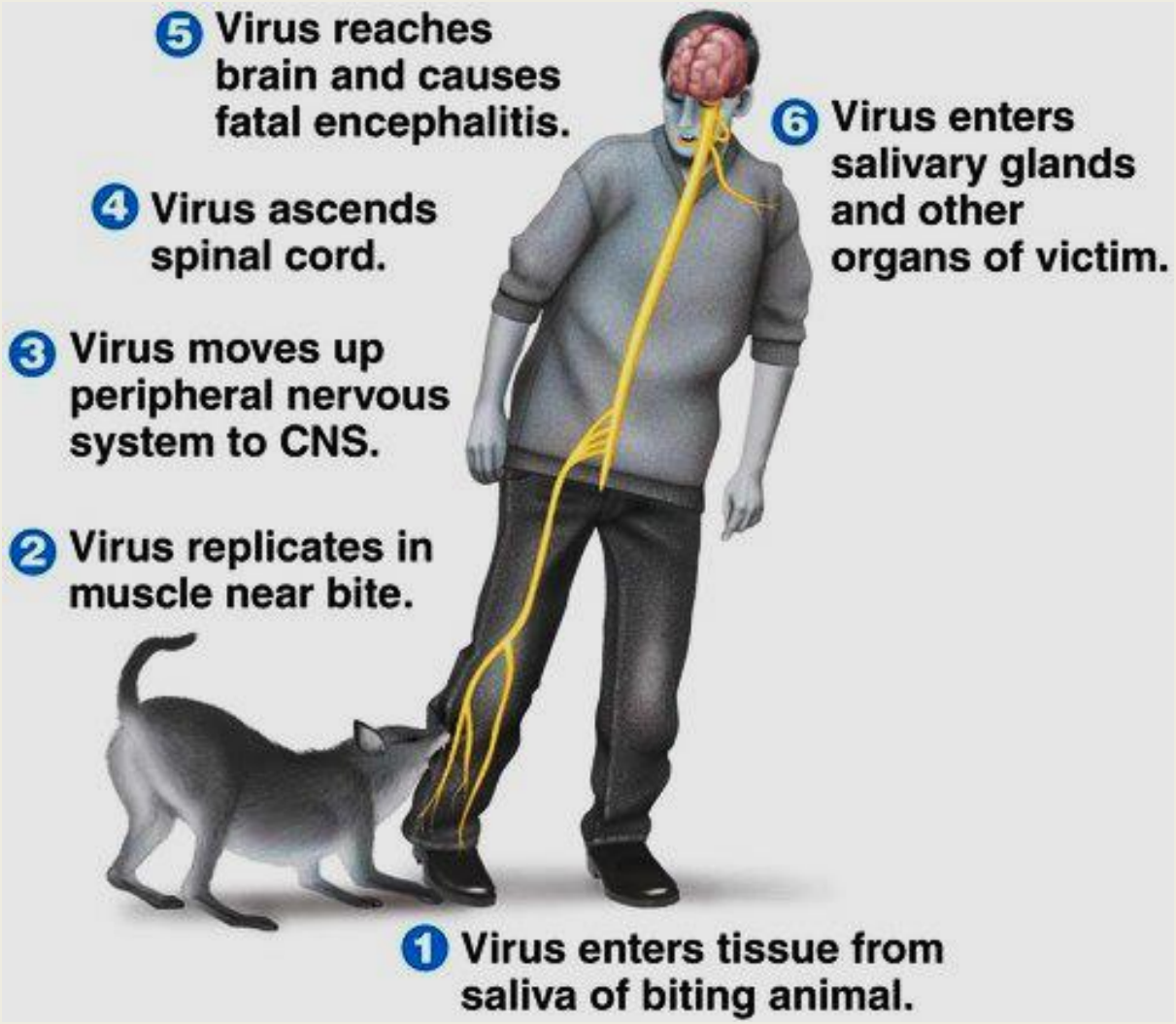
Rabies in Human



Instruction to the Trainer

- *Clearly explain public health impact of rabies so that the trainee can be aware of it and take proper measure in their day to day life activities*

Rabies in Human



Instruction to the Trainer

- *Show the image and explain the pathogenesis of rabies briefly*

Signs of Rabies in Human

Aggression
Photophobia
Difficulty of swallowing

Fever
Headache
Nausea
Hydrophobia



Instruction to the Trainer

- *Show the picture and explain the clinical signs sequentially*

Rabies

How can we prevent rabies ?

- ✓ Vaccinate dogs annually
- ✓ Report to local authorities or animal health experts if encounter rabies suspected animal
- ✓ Do not approach or attempt to handle stray animals and rabies suspected animal
- ✓ Fenced your dog





Instruction to the Trainer

- ***Please show a pictures for then trainees***
- ***Explain about controlling rabies in animals through annual dog vaccination and dog population management are the best effective ways to prevent the disease and the absence of treatment for rabies***
- *Complete this within maximum of 10 minutes*
- ***Photo credit : Ministry of Agriculture***

Rabies

What a person should do if bitten by infected dog?

Immediately wash the wound with soap and running water for at least 15 minutes.	
Disinfect the wound with alcohol or an iodine solution. (If possible)	
Immediately consult a doctor or go to the nearest health facility.	

Instruction to the Trainer

- *Please show a pictures for the trainees*
- *Briefly explain about the dog bite management until they understand*
- *Complete this topic within maximum of 10 minutes*
- *Photo credit : GARC*

2. Anthrax

What is anthrax ?

- ✓ It is fatal zoonotic disease affecting humans and animals
- ✓ causes serious public health and economic loss

What causes anthrax?

- ✓ Anthrax is caused by a bacteria called bacillus anthracis
- ✓ The bacteria can survive for long time in soil, on wool or hair of infected animals and be as source of infection.

Trainer Instruction

- ***Ask the local name of anthrax and whether the trainees know the disease***

Anthrax

What are ways of anthrax transmission?

- ✓ Animals become infected by ingested or inhaled bacteria spores which are in the soil or in feed
- ✓ Humans can be infected with ingestion raw meat, milk and egg from infected animals

Anthrax

- **What are the signs of anthrax**



- ✓ In per acute case, animals die suddenly without showing any signs.



- ✓ High fever, tremors, depression, convulsion, respiratory distress, abdominal oedema, bloody milk



- ✓ Discharge of exudative tarry blood from natural orifices

Trainer Instruction
Ask what symptoms they know locally and discuss to share experience
Show the picture of sudden death and the signs

Anthrax

- **Prevention and control**

✓ regular vaccination for animals

✓ Proper disposal of dead animals,

  - *by incineration or alternatively by deep burial*
  - ***Care:*** *do not open the carcass*

✓ Cleaning and disinfection

✓ Treatment of sick animal

Trainer Instruction
Ask the trainee how they manage/ dispose dead animals carcass
Clearly discuss that opening of anthrax infected carcass is dangerous since exposure to air will allow the bacteria to form spores

3. Brucellosis

What is brucellosis ?

- ✓ Brucellosis is a zoonotic disease affecting animals and humans
- ✓ The disease is mainly affects dairy cattle and cause serious economic loss and public health risk

What is the cause of brucellosis?

- This disease is caused by group of bacteria called *Brucella*

Trainer Instruction
Ask the local name of brucellosis and whether the trainees know the disease
Complete this topic within maximum of 10 minutes

Brucellosis…

How brucellosis transmitted?



- ✓ Ingestion of contaminated feed and food
- ✓ The bacteria can penetrate tmucous membranes
- ✓ Infected bull service
- ✓ Human can be infected with consumption of unboiled milk, undercooked meat and blood



Trainer Instruction
Discuss about the habit of consuming raw animal product and its danger
Open discussion and dig out the root cause of consuming raw products to reach to the relevant concept

Brucellosis

What are signs of brucellosis

- **In animals**



- Abortion in late pregnancy
- Stillbirth (birth of weak calves)
- Retained foetal membrane
- Inflammation of testicles
- Arthritis due to chronic infections
- Reduced milk yield



Trainer Instruction
Ask and discuss if they faced these kinds of signs and what they do

Brucellosis…

- **In humans**

- Intermittent or irregular fever
- anorexia, nausea, vomiting, diarrhea,
- constipation, malaise, night sweating
- testicles and testicular abscesses may occur
- chronic infections may result in joints pain

- Infertility



Trainer Instruction
Ask and discuss if they faced these kinds of signs in humans and what they do

Brucellosis

How can we prevent and control brucellosis?

- Proper disposal of aborted materialss
- Keep clean housing
- Use separate house
- Isolation of aborted animal
- Use boiled milk
- Report to near by clinic

Trainer Instruction
Discuss they understand the prevention and control methods

4. Bovine tuberculosis

What is bovine tuberculosis ?

- ✓ Bovine tuberculosis is a chronic disease of animals and humans
- ✓ The disease causes serious economic loss in dairy sector and has public health impact

What causes bovine tuberculosis?

- ✓ It is caused by a bacteria called *Mycobacterium bovis*.

Trainer Instruction
Discuss about TB and if they faced the disease in animal and humans and what they do About the care of TB management

Bovine tuberculosis

How tuberculosis transmitted?

- ✓ It is transmitted by contact with infected animals.
- ✓ is usually transmitted by inhaling infected droplets from infected animal or humans
- ✓ Humans can be infected by ingesting raw milk from infected cows.

Trainer Instruction
Discuss about the course of disease is slow, taking months or years in infected animal. This shows that animal can spread the disease to other

Bovine tuberculosis

What are major symptoms of bovine tuberculosis?

- ✓ Sever emaciation, weakness, loss of appetite, weight-loss
- ✓ fluctuating fever,
- ✓ intermittent hacking cough
- ✓ diarrhoea
- ✓ swelling of lymph nodes





Trainer Instruction
Explain about the nature of bacteria, that can lie dormant in the host without causing disease so that transmission is possible without an aware.

Bovine tuberculosis

- **What are prevention and control methods of tuberculosis ?**

- ✓ Use boiled milk to prevent humans' infection
- ✓ Consume inspected meat
- ✓ Use separate house for humans and animals
- ✓ keep the house clean
- ✓ Keep environmental sanitation
- ✓ Cull tuberculosis infected animals

Trainer Instruction
Explain about the nature of bacteria, that can lie dormant in the host without causing disease so that transmission is possible without an aware.

5. Highly Pathogenic Avian Influenza

What is Avian Influenza ?

- ✓ Avian influenza (bird flu) is a highly contagious viral disease mainly affects birds.
- ✓ It seriously affects poultry Farmers /pastoralists/ whenever outbreak is occurred.
- ✓ The diseases is zoonotic so that affect humans
- **What is the cause of Avian Influenza ?**
- It is caused by influenza viruses.

Trainer Instruction
Ask and discuss whether the trainees knows bird flu

Avian Influenza

How avian influenza transmitted?

- ✓ It can spread by direct contact with infected animals or birds or their saliva, faeces
- ✓ In addition, human get infection by consumption of raw contaminated poultry product
- ✓ The disease can spreads very quickly between birds and causes death at large number of birds

Avian Influenza

What are the signs in animals ?

- ✓ Sudden death of many birds
- ✓ Watery diarrhea
- ✓ Unable to walk, or sitting with head down
- ✓ Purple discoloration/cyanosis of the wattles, combs, and legs
- ✓ Ruffled feathers
- ✓ Significant drop in egg production





Trainer Instruction
Show the picture make the trainees understand the signs
Ask local experience regarding poultry disease

Avian Influenza

What are the signs in humans ?

- ✓ Fever, cough or sore throat
- ✓ Difficulty breathing and Tiredness
- ✓ Eye redness and Muscle aches
- ✓ Abdominal pain, chest pain
- ✓ Nausea, vomiting, diarrhea
- ✓ Seizures/shaking

Trainer Instruction
Ask local experience regarding such kind of disease in humans

Avian Influenza

What are the prevention methods of avian influenza?

- ✓ Do not contact with wild birds and animals
- ✓ Don’t sell or slaughter sick chicken
- ✓ Keep housing and environmental sanitation
- ✓ wash your hands with soap and water after handling poultry and their products
- ✓ dispose dead bids by burial or burning

Avian Influenza

What immediate action should be taken when there is outbreak of bird flu?

- ✓ Isolate infected bird
- ✓ Dispose dead bird
- ✓ Do not sell, move and slaughter sick bird
- ✓ Take care of your self
- ✓ Report to local veterinary office

Post-training questions

Indicate whether the following statements are TRUE or FALSE

1. Some diseases in humans can come from animals.
2. People can get sick from touching or being bitten by animals.
3. Eating raw or undercooked meat, milk, or eggs from animals can sometimes cause illness.
4. Zoonotic diseases can reduce a family's income if a sick person or animal cannot work or produce food.
5. Communities can prevent zoonotic diseases if they have proper knowledge and take precautions.

Instruction to the Trainer

- *Test the Farmers /pastoralists/ understanding about zoonoses using the leading questions*
- *Try to understand their level of understanding so that you can deliver proper training*
- *Appreciate their answer and recognize them so that they can be motivated*

Module2:
Animal source Food Safety



Overview of Module2

- This food safety package is fundamental to public health as it ensures the food we consume is safe, nutritious, and free from harmful contaminants. Unsafe food sources often include contaminated water, unhygienic processing environments, infected animals, and poor handling practices that introduce pathogen or chemical residues into food products. Proper hygienic handling of food involves cleanliness during preparation, reduce the risk of spreading pathogens. Proper management in these areas ensures food remains safe from farm to table, safeguarding consumer health. Training of this module may be completed within 1 to 2 hours

Instruction to the Trainer

- Why food safety is critical for public health, highlighting the risks of foodborne illnesses common sources of contamination,

Welcoming and Introduction

Welcoming

- Name and role of the trainers
- Name and address of the trainees
- Number and species of livestock owned

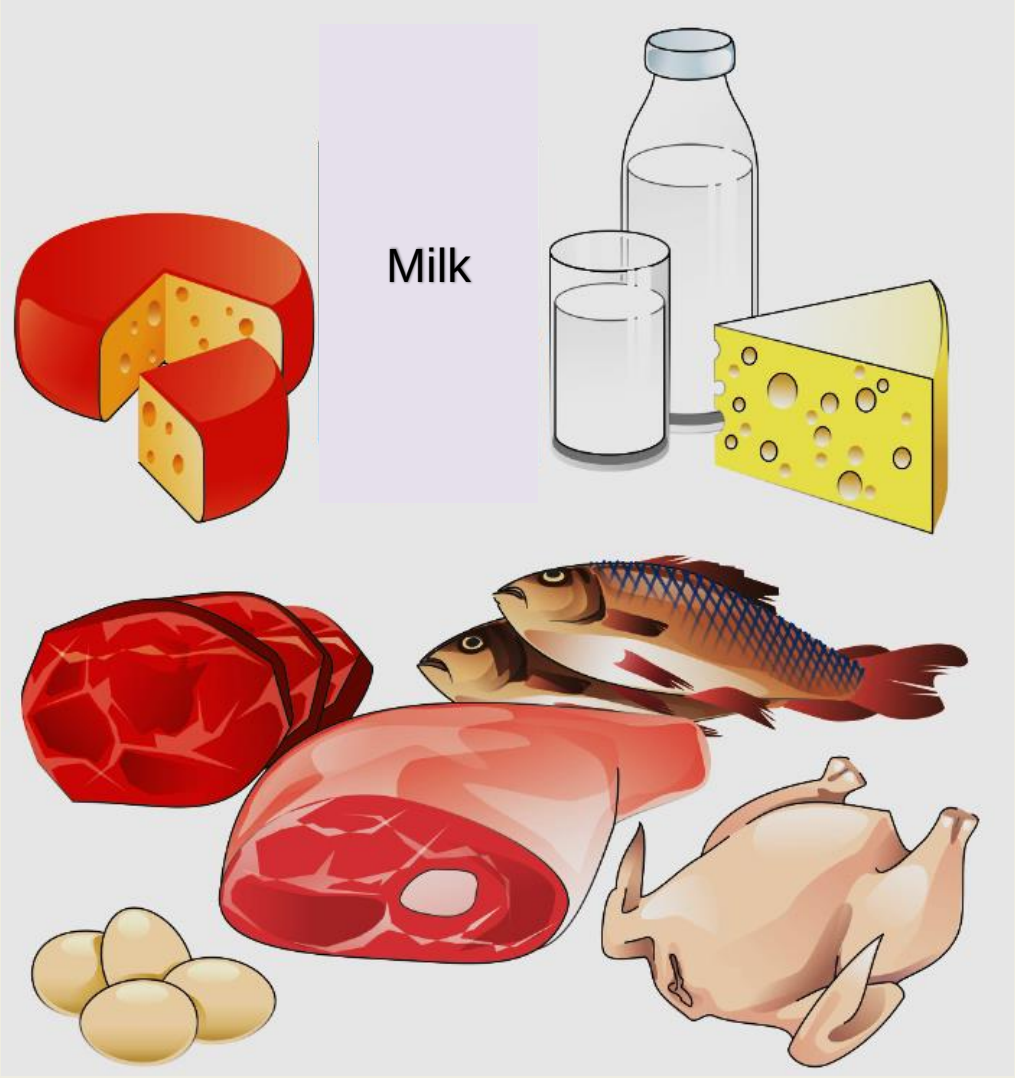
Learning Objectives

- Aware about importance of food safety in animal-origin products
- Understand food hygienic practices how to handling, storage and transportation to keep the safety of food for human consumption
- Understand and how to clean and disinfectants the equipment for reduces contamination to safe food

Instruction to the Trainer

- *Please politely and warmly provide greetings to the animal owners and clearly introduce your self (name and your work).*
- *Ask all the trainees to introduce themselves (name and specific address),*
- *Ask Farmers /pastoralists/ what they expect from the training and what they hope to change due to the training.,*
- *On a flipchart, write down Farmers /pastoralists/' expectations and intentions to apply the training.*
- *Then, briefly explain the training objectives and approach of the training.*

What are animal source foods?



- Milk
- Meat
- Egg
- Honey
- Fish

Instruction to the Trainer

- *Ask participants the describe the different b/n milk safety and Quality*
- *When we say good quality milk how we can describe and what criteria should be needed*

Why animal origin food safety matters?

- Animal-origin foods (like meat, milk, eggs, and blood) are vital sources of nutrition
- But if not handled properly, they can cause disease like;

  - ❑ Brucellosis,
  - ❑ Tuberculosis (TB)
  - ❑ Anthrax
  - ❑ Tapeworms
  - ❑ Typhoid (salmonellosis)

Instruction to the Trainer

- ***Ask participants the describe the different b/n milk safety and Quality***
- ***When we say good quality milk how we can describe and what criteria should be needed***

1. Milk safety & quality

What is milk safety?

It refers to milk is free from;

- harmful contaminants,
- Pathogens
- Chemicals
- spoilage agents

making it safe for human consumption.





Instruction to the Trainer

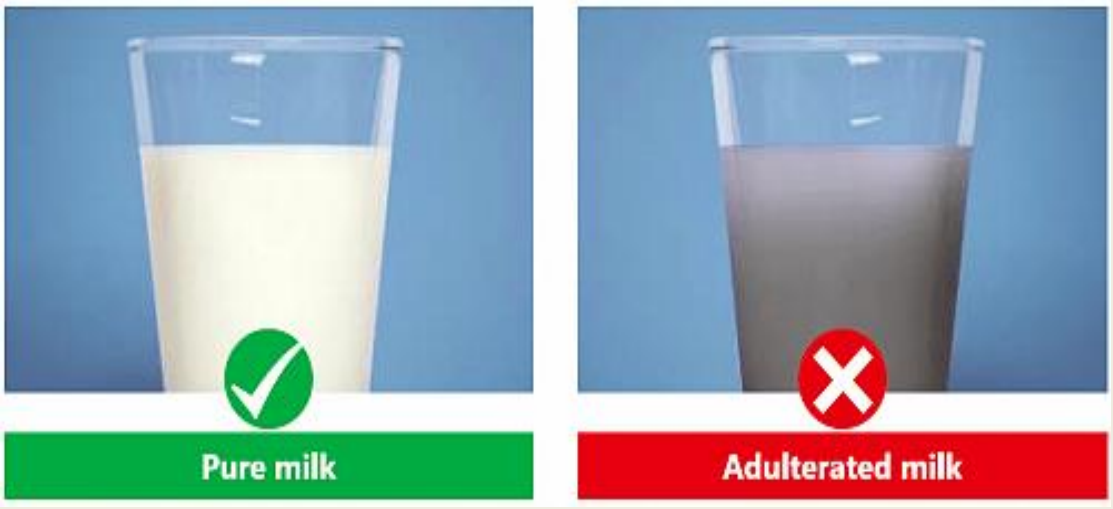
- *Ask participants the describe the different b/n milk safety and Quality*
- *When we say good quality milk how we can describe and what criteria should be needed*

Milk safety & quality

What is good quality milk?

Milk can be considered good quality if it is

- Free from adulteration like water, starch, urea etc
- Free from any foreign particles/dirt like straws, hairs
- Does not contain any antibiotic and pesticide residues
- Does not contain any germs beyond acceptable limits
- Does not contain any toxic substances



Instruction to the Trainer

- *Ask participants the describe the different b/n milk safety and Quality*
- *When we say good quality milk how we can describe and what criteria should be needed*

How to make milk safer for human consumption?

- Milk only healthy animals — sick animals can pass diseases through milk.
- Check udders for wounds, swelling, or pus before milking.
- Do not milk animals that have just been treated with drugs (follow the withdrawal period) - drug is excreted through milk for few days following treatment

Instruction to the Trainer

- ***Please show a picture of how to handling milk that indicates safe milk from contamination***
- ***Inform them how personal hygiene, clean equipment, cooling enhance the safety of milk***

How to make milk safer for human consumption?

- Wash hands with soap and clean water before milking.
- Clean the udder and teats using warm water and a clean cloth.
- Use clean containers (preferably aluminum or stainless steel).
- Wash all milk containers with soap and clean water, then rinse and dry.
- Avoid plastic containers that are hard to clean and can harbor germs.
- Keep milking and storage containers covered to protect from flies and dust.

Instruction to the Trainer

- ***Please show a picture of how to handling milk that indicates safe milk from contamination***
- ***Inform them how personal hygiene, clean equipment, cooling enhance the safety of milk***

How to make milk safer for human consumption?

- Always boil milk before drinking to kill germs.
- Do not drink raw (unboiled) milk — it can make you sick.
- Keep milk in a cool place. If there is no fridge, put the container in cold water.
- If not kept cold, use the milk within 6 to 12 hours.
- When making sour (fermented) milk, use only clean containers.
- Keep milk away from animals, dung, smoke, and direct sunlight.

Instruction to the Trainer

- ***Please show a picture of how to handling milk that indicates safe milk from contamination***
- ***Inform them how personal hygiene, clean equipment, cooling enhance the safety of milk***

How to make milk safer for human consumption?

- Avoid using dirty cloths, hands, or ladles when handling milk.
- Do not mix fresh milk with sour/old milk unless fermenting traditionally in a safe way
- Educate family members (especially those who prepare food or care for children).
- Report sick animals early to animal health workers.
- Never sell or share unsafe milk — it can harm others.

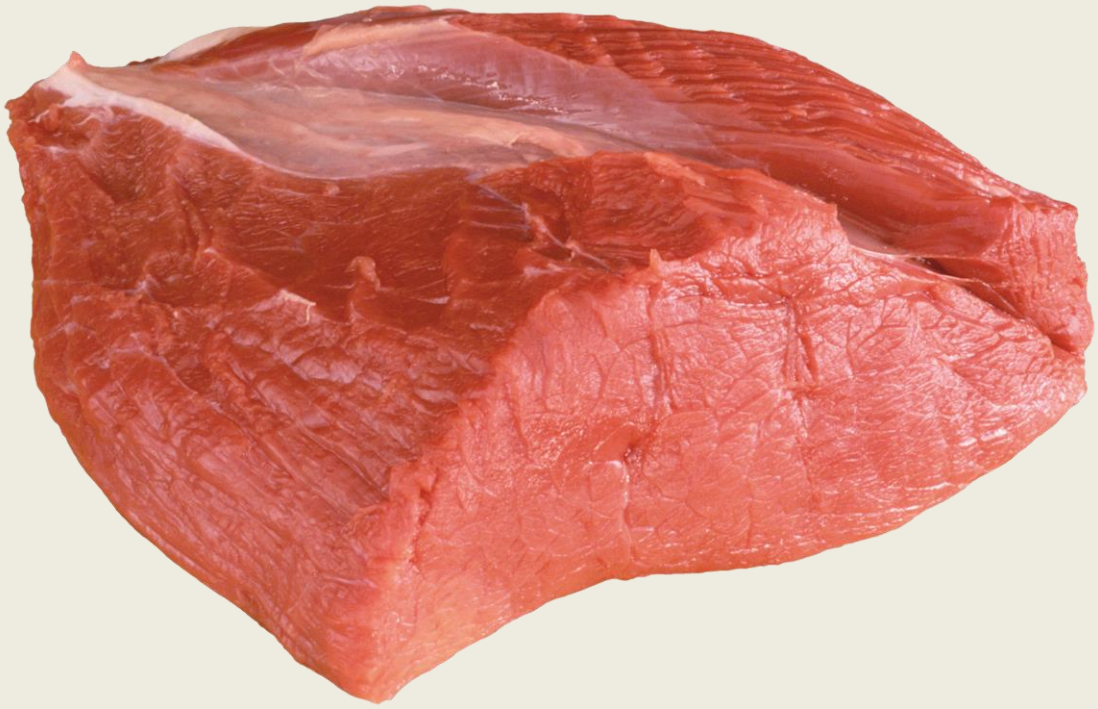
Instruction to the Trainer

- ***Please show a picture of how to handling milk that indicates safe milk from contamination***
- ***Inform them how personal hygiene, clean equipment, cooling enhance the safety of milk***

Key Messages for Farmers /pastoralists/

1. Use clean equipment and containers.
2. Wash hands thoroughly before milking to prevent contamination.
3. Keep dairy animals healthy and clean.
4. Protect the milk from dirt, dust, insects, and foreign objects during collection and storage.
5. Cool milk quickly after milking to inhibit bacterial growth
6. Drinking raw or unpasteurized milk carries health risks, including bacterial infections such as Salmonella, E. coli, and Listeria.
7. Ensure dairy animals are regularly checked for diseases to minimize contamination risks

2. Meat safety



Meat safety: The measures and practices implemented to ensure that meat free from harmful contaminants, pathogens, chemicals, and Physical hazards that could cause illness or health issues in consumers.

How to make meat safe for consumption ?

- Always use clean knives and equipment when slaughtering animals.
- Avoid slaughtering animals in dusty, dirty, or dung-contaminated areas.
- Prevent contact between meat and feces, urine, or soil.
- Wash hands frequently before and after handling meat.
- If available, ensure animals are inspected before and after slaughter.

How to make meat safe for consumption ?

- Avoid consuming meat from animals with unusual swellings, discolored organs, or bad smells.
- Tell animal health workers about unusual animal deaths or illness.
- Hang meat in a shaded, airy area to cool. Avoid stacking hot meat.
- Keep meat covered to protect from flies, dust, and animals.
- Avoid cross-contamination by keeping raw meat away from cooked foods and drinking water.

How to make meat safe for consumption ?

- Boil or roast organ meats well before eating (e.g., liver, kidney).
- Avoid eating raw meat, especially from unknown or sick animals.
- Avoid Slaughtering Sick Animals
- Don’t eat meat from sick or dead animals.
- Bury or burn carcasses of dead animals—don’t feed them to dogs or other animals.

Instruction to the Trainer

- *Ask all the source of germs that contaminate meat safety*

How to make meat safe for consumption ?

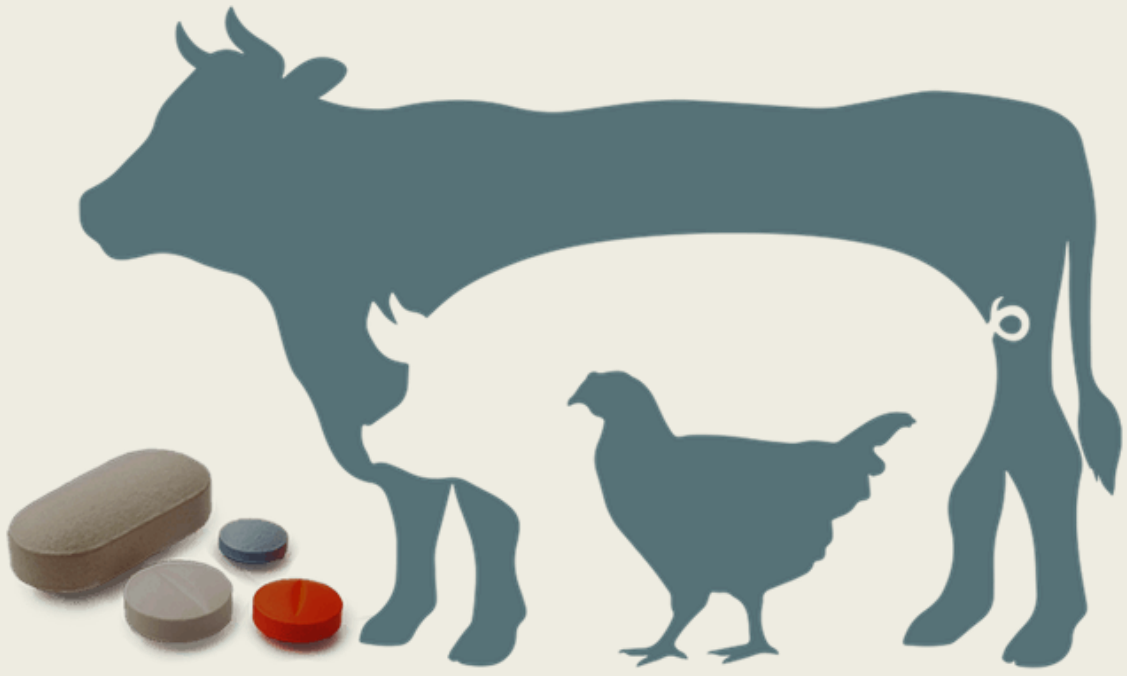
- Dry or smoke meat if refrigeration is unavailable.
- Preserve using salt or traditional methods in clean conditions.
- Report outbreaks of livestock disease immediately.
- Avoid moving animals from outbreak zones to reduce disease spread.

Key messages

1. Wash hands thoroughly before and after handling meat.
2. Clean all surfaces, utensils, and cutting boards after use.
3. Rinse meat under clean, running water to reduce surface germs.
4. Proper cleaning reduces the risk of contamination and ensures safety.
5. Consuming contaminated meat can lead to illnesses like Salmonella, E. coli, and others.
6. Cook meat to the recommended internal temperatures to kill germs
7. Proper handling and storage are crucial to maintain meat quality and safety.

Module3:

Rational use of veterinary drugs for prevention of antimicrobial Resistance



Overview of the module

- Rational veterinary drug use improves animal health, productivity, and food safety by ensuring the right drug, dose, and duration are used only when necessary.
- Misuse or overuse of drugs leads to treatment failure, financial loss, and antimicrobial resistance.
- Antimicrobial resistance threatens the health of animals, people, and the environment.
- This package supports proper veterinary drug use, withdrawal period adherence, and disease prevention through vaccination, hygiene, and biosecurity.

Welcoming and Introduction

Welcoming

- Name and role of the trainers
- Name and address of the trainees
- Number and species of livestock owned

Learning Objectives

At the end of this session trainees will able to;

- Gain a clear understanding of rational veterinary drug use and its importance.
- Understand the concept of irrational drug use and its connection to antimicrobial resistance.
- Recognize the key factors that contribute to irrational drug use and the emergence of AMR.
- Learn effective strategies for the prevention and containment of AMR in veterinary practice.

Pre/post-training test

1. Veterinary drugs are medicines used to treat animal diseases. (True/False)
2. Rational use of veterinary drugs means using medicines correctly and responsibly. (True/False)
3. Using veterinary drugs incorrectly can cause antimicrobial resistance, making treatments less effective. (True/False)
4. When animals are sick, proper treatment actions should always be taken. (True/False)
5. Veterinary drugs should be purchased only from trusted and authorized sources. (True/False)
6. Consulting a veterinary professional before giving drugs to sick animals is important. (True/False)
7. Using human medicines to treat sick animals is acceptable. (True/False)
8. Animals should be given the full prescribed course of veterinary drugs to ensure recovery. (True/False)

What is rational veterinary drug use and antimicrobial resistance ?

- **A veterinary drug:** is any substance used to diagnose, treat, or prevent animal diseases.
- **Rational veterinary drug use:** is giving the right drug, in the right dose, for the right duration, to the right animal, at a reasonable cost, with proper veterinary advice.
- **Irrational use of veterinary drug**: means misuse (over/under use) of veterinary drugs.
- **Antimicrobial resistance:** means that disease causing- germs no longer respond to drugs that used to kill them.

- ***Instruction to the Trainer***
- Give a clear overview of veterinary drugs, their types, and uses with demonstration of pictures. Teach how to correctly identify and use them. Promote proper and responsible use. Explain how medicines fight germs and how misuse can cause resistance. Time: 20 minutes

What does irrational veterinary drug use include?

- Treating animals with veterinary drugs when no treatment is necessary.
- Administering excessive or unnecessary medications.
- Using incorrect drugs for the specific disease or condition.
- Using drugs with unproven or no effectiveness.
- Improper use of the right drug (wrong diagnosis, dose, route, or duration).
- Purchasing drugs from illegal sources.
- Using expired, leftover, or human medications; self-medicating for animals.
- Overlooking veterinary advice or guidelines; untrained owners treating animals

- ***Instruction to the Trainer***
- Give a clear overview of veterinary drugs, their types, and uses with demonstration of pictures. Teach how to correctly identify and use them. Promote proper and responsible use. Explain how medicines fight germs and how misuse can cause resistance. Time: 20 minutes

What are major impacts of irrational veterinary drug use?

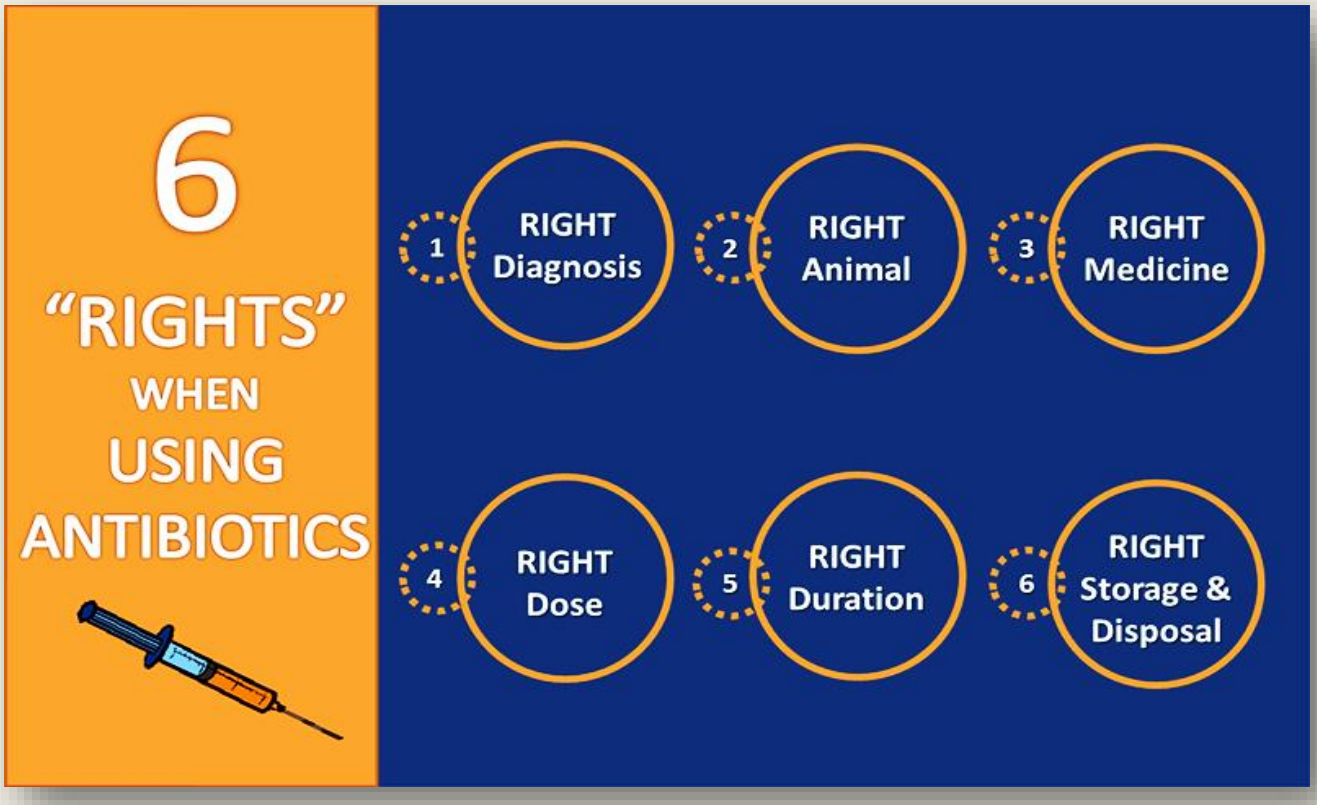
- Emergence of drug resistant organisms
- Treatment failures in animals
- Increase mortality
- Increased cost of animal health care
- Animal production losses
- Risk to food safety and public health
- Masking or confusing or delaying correct diagnosis
- Reduced availability of effective veterinary drugs
- Environmental contamination
- Loss of market access
- Weakened animal welfare

Instruction to the Trainer

- *Ask animal owners about antimicrobial resistance and their impacts?*
- *Then explain the detail of economic and public health impact of antimicrobial resistance. Time: 30 minutes*

Rational use of veterinary drugs

Following 6 Right in Rational use of veterinary drug



6 Rights in use of drug

The **"6 Rights"** in the **rational use of veterinary drugs** refer to key principles that ensure safe, effective, and responsible treatment of animals.

1. **Right Drug** – Use the correct drug for the diagnosed condition.
2. **Right Animal** – Treat the correct animal(s) that need the medication.
3. **Right Dose** – Give the correct amount of the drug based on weight, species, and condition.
4. **Right Route** – Administer the drug using the correct method (e.g., oral, injection, topical).
5. **Right Time** – Give the drug at the correct intervals and for the right duration.
6. **Right Record** – Keep proper records of drug use, including name, dose, date, and withdrawal period.

General rule of rational use of veterinary drug

- Use legal Drug: Purchase veterinary drugs from legal vendors (don't buy drug from illegal/unlicensed/open market) which may harmful to animal
- Always use drugs prescribed by trained animal health professionals.
- **Do not share drugs between animals or species**: What works for one animal may not work or may harm another.

General rule of rational use of veterinary drug

- **Use only when necessary**: Avoid using veterinary drugs without proper veterinary diagnosis.
- **Follow veterinary advice**: Use drugs prescribed or recommended by qualified personnel.
- **Use the right drug:** Select drugs specifically meant for the diagnosed condition and the animal species.
- **Give the right dose:** Use the correct amount based on animal weight, age, and species.
- **Avoid expired or counterfeit drugs:** Check expiry dates and source drugs from trusted suppliers.

General rule of rational use of veterinary drug

- **Treat for the correct duration:** Do not stop treatment early, even if the animal looks better.
- **Observe withdrawal periods:** Do not sell or consume milk, meat, or eggs from treated animals before the stated period ends.

Approximate Recommended Withdrawal time of different Drug for meat and Milk

Drug Type	Milk Withdrawal	Meat Withdrawal
Antibiotics	3–7 days	7–28 days
Dewormers	2–5 days	7–21 days
Anti-inflammatory	3 days	5–15 days
Vaccines	No milk withdrawal usually	21–60 days (check label)

General rule of rational use of veterinary drug

- **Store drugs properly**: Keep medicines in a cool, dry place away from sunlight, children, and animals.
- Do not use antibiotics for growth promotion or for non-specific symptoms.
- Avoid using human antibiotics on animals.
- Say NO to using drugs based on guesswork or neighbor advice.
- Improve housing, nutrition, and vaccination to reduce disease and drug dependence.
- **Keep treatment records:** Note what was used, how much, when, and for which animal.

Best option: Healthy animals = Less medicine=lower costs=safer food=Healthy human.

When we focus prevention of animal disease;

- ✓ Animal will not get sick,
- ✓ There will be no need to use veterinary drug

-Minimized cost of production

-Safer animal source food

-There will be Health family

Follow the following to keep animal health to minimize dependency on veterinary drugs;

1. Improve animal care by Providing clean water, good feed, shelter, and hygiene.
2. Vaccinate regularly to Prevent diseases before they occur.
3. Isolate sick animals to Stop disease from spreading.
4. Deworm animals wisely Only when necessary

Best option: Healthy animals = Less medicine=lower costs=safer food=Healthy human.

5. Use safe traditional remedies

For mild conditions, where proven.

6. Avoid self-treatment – Always

seek advice before giving medicine.

7. Keep records – Track health,

treatments, and vaccinations.

8. Check animals regularly – Early

action prevents heavy drug use.

References

1. Mechale, H. (2017). *Ethiopia livestock sector analysis.* ILRI Project Report. International Livestock Research Institute. https://hdl.handle.net/10568/92405
2. Farm Africa. (2021). *Livestock for Livelihoods: Community Animal Health Workers in Ethiopia and Uganda*. Farm Africa. https://www.farmafrica.org/downloads/resources/livestock-for-livelihoods-community-animal-health-workers.pdf
3. **Randolph, T. F. et al. (2007).***Role of Livestock in Human Nutrition and Health for Poverty Reduction in Developing Countries.* Journal of Animal Science, 85(11), 2788–2800. https://doi.org/10.2527/jas.2007-0467
4. **FAO (2011).** *Livestock and Livelihoods in Developing Countries.* Food and Agriculture Organization of the United Nations. https://www.fao.org
5. Kebede, H., Melaku, A., & Sisay, Z. (2021). *Animal health service delivery in crop-livestock and pastoral systems in Ethiopia: Current status and policy implications.* Veterinary Medicine and Science, 7(3), 842–854. https://doi.org/10.1002/vms3.433
6. **AU-IBAR (2014).** *The Contribution of Livestock to African Economies.* African Union – Inter-African Bureau for Animal Resources. https://www.au-ibar.org
7. **Grace, D. et al. (2015).** *The Impact of Livestock Diseases on Livelihoods in the Developing World.* ILRI Research Report. International Livestock Research Institute. https://www.ilri.org
8. **FAO (2021).** *The State of Food and Agriculture: Making Agrifood Systems More Resilient to Shocks and Stresses.* Food and Agriculture Organization of the United Nations. https://www.fao.org/sofa
9. **Nyangaga, J., and Ndiwa, N. (2015).** *Economic Impact of Community Animal Health Workers in Pastoral Areas of Kenya.* Kenya Market Trust Working Paper.

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