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Ministry of Labor and Skills

ANIMAL HEALTH

Level – I

Based on March, 2022 Version 4 Occupational Standard



Module Title: Carrying out Cleaning for Animal Care Work and Waste Management Activities

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Ministry of Labor and Skills

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Introduction to the Module

This module covers knowledge, skills and attitude required to clean animal premises, perform animal care cleaning activities, and implement waste management. It requires the ability to identify hazards, follow OHS procedures, clean animal premises, veterinary clinic and laboratories, collect and segregate wastes, prioritize waste treatment and disposal options up on completion of cleaning activities.

LG #10 LO #1- Apply OHS procedures

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- The concept of OHS and types of hazard
- work-related hazards
- Reporting Risks at work place
- Handling and using PPE
- Implementing Safe work practices and follows strict OHS procedures.

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Understand the concept of OHS and types of hazard
- Identify work-related hazards and follow strict OHS procedures.
- Identify and recognize risks related to heat, electricity, detergents and chemical agents and report to designate personnel.
- Select, check, use, maintains and store Suitable PPE clothing and Equipment
- Implement safety precautions with safe work practices and OHS procedures

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the information Sheets
4. Accomplish the Self-checks
5. Perform Operation Sheets
6. Do the “LAP test”

Information Sheet 1

1.1. The Concepts of OHS and Types of Hazards

1.1.1. Definition of Terminologies

- **Safety:** The protection from physical injury and mental well-being of the individual.
- **Health:** The protection of the body and mind of people from illness
- **Welfare:** The provision of facilities to maintain the health and well being of the individual in the work place.
- **Hazard:** The way in which an object or a situation may cause harm.
- **Risk:** The chance that such effects will occur.
- **Exposure:** To the extent to which the likely recipient of the harm is exposed to or can be influence by the hazard
- **Occupational health and safety:** a state of complete **physical, mental** and **social well-being** of a **worker.**

1.1.2. The Concepts of OHS

- **Occupational health and safety is a discipline with a broad scope involving many specialized fields.**
- **In its broadest sense it should aimed at:**
  - ✓ **The Promotion and maintenance** of the highest degree of physical, mental and social well-being of workers in all occupations.
  - ✓ **Prevention** among workers from adverse effects of health caused by working conditions.
  - ✓ **Protection** of workers in employments 'resulting from adverse effects of health.
  - ✓ **Placing and maintenance** of workers .in an occupational environment to physical and mental needs.
  - ✓ **Adaptation** of workers to humans.

1.1.3. Types of Hazards

Introduction: The most common definition of hazard: types it is something that has the potential to cause harm to: People, Property and, and the environment. Risk: refers to the chance or probability of that hazard causing harm to: People, Property and The environment.

A. Types of hazards are:

- Physical hazard: any hazard that comes from environmental factors. Examples; vibration, loud noise, electrical frayed cord
- Biological hazard: a living or once living organism that have a potential to poses a threat to human health. Examples; blood or other body fluids, fungi, bacteria etc
- Chemical hazard: any hazard that comes from a solid, liquid, or gas elements, compound, or mixture that could cause health problem or pollution. Examples; cleaning products, pesticides, welding fumes etc
- Ergonomic hazard: physical conditions that may pose a risk of injury to the musculoskeletal system. Examples; awkward postures, static postures, high forces, repetitive motion, etc
- Psychological hazard: aspects of the work environment and the way that work is organized that are associated with psychiatric, psychological and /or physical injury or illness. Example; stress, bullying, drug addiction, sexual harassment etc.

1.2. Work-Related Hazards

- In businesses, nothing is more important than safety and health of fellow human beings.
  - ✓ Organizations strive to make their work place safer due to:
    - Brand and reputation protection
    - Legal and regulatory compliance obligation
    - Huge penalties
    - Heavy compensations
    - locking/ sealing of the premises for good
    - Imprisonment
    - Lifelong pricking of guilt of fellow humans suffering that could have been avoided
- Each industry has to negotiate unique hazards, specific to its core activities.

- ✓ Examples dairy industry, pharmaceutical industry, health care sector, education sectors, mining, ship building, food processing, IT industry, textiles, retails industry, aviation sector, etc have very unique health and safety hazard which are industry and sector specific.

- Health and safety practices corresponding to the unique core processes are discussed separately, to save every body's time.
- However, bulk common and important health and safety program which are imbibed by all industries find immense use during their:
  - ✓ Product
  - ✓ Services and
  - ✓ Project life cycles are captured here.
- It is extremely important to identify work place health and safety hazards besides verification of identified hazards at the work places in departments for example, material handling and storage in the laboratory
- OHS programs that should be of utmost interest to the organizations are:
  - ✓ Scientific analysis of the risks at work place
  - ✓ Health and safety - working in confine spaces
    - from heights
    - near moving parts
    - in chemical processing
    - in office and high rise building
    - in basement and underground spaces
  - ✓ Health and safety – handling various types of waste (except hazardous waste) depend on the industry to industry
  - ✓ Occupational asthma
    - heat exposure
    - epidemiology
    - noise exposure
  - ✓ Injury and illness prevention programs
    - recordkeeping and reporting requirements
  - ✓ Pandemic influenza
  - ✓ Personal protective equipment (PPE)
  - ✓ Gas and fuels- health and safety
  - ✓ Blood borne viruses (BBV)
  - ✓ Hazardous substances
  - ✓ Skin and respiratory sensitizers
  - ✓ Vibration hazards
  - ✓ Equipment and safe working practice

- ✓ Working near and on electrical systems and equipment
- ✓ Health and safety- travelling and commuting
- ✓ Health and safety – working across time zones
- ✓ Health and safety-night shifts
- ✓ Work place health and safety risks mitigation strategies and techniques
- ✓ Health and safety committees
- ✓ Violence in work places- establishing mitigation and reduction protocols
- ✓ Types of accidents, and design of strategies for accident avoidance
- ✓ Accident reporting
- ✓ Accident investigation
- ✓ Role of teams in health and safety
- ✓ Emergency preparedness and response
- ✓ Wellness versus health and safety
- ✓ Ergonomics and work place inspections
- ✓ Effectiveness of instrumentation in health and safety and maintaining " admissible" records
- ✓ Monitoring and measuring health and safety performance at workplace
- ✓ Managing health and safety across the organization by adopting "excellence" approach

- Hazard identifying in the workplaces are performed:
  - ✓ By carrying out a workplace risk assessment
  - ✓ Determining how employees might be at risk
  - ✓ Evaluate the risks
  - ✓ Record and review hazards at least annually, or earlier if something changes
- Purposes of hazard identifications are:
  - ✓ To ensure there is a formal process for hazard identification and risk assessment which will effectively manage the hazard that may occur within the workplace.
  - ✓ This procedure applies to all veterinary colleges staffs trainees and trainers
- Health hazards include chemicals which are:
  - ✓ Carcinogens.
  - ✓ Toxic or highly toxic agents
  - ✓ Reproductive toxins
  - ✓ Irritants
  - ✓ Corrosives
  - ✓ Sensitizers
  - ✓ Hepatotoxins
  - ✓ Nephrotoxins

- ✓ Neurotoxins
- ✓ Agents which act on the hematopoietic system
  - The lungs
  - Skin
- ✓ Agents which damage:
  - Eyes and
  - Mucous membranes

- The most effective hazard controls are:
  - ✓ By removing or eliminate hazard that is the best way to control workers, from the workplaces using the following hazard control methods:
    - Substitution;
      - Substitute dangerous chemicals
      - Equipments
- Work methods with safer and less hazardous ones to eliminate the hazard altogether
- Occupational diseases are:
  - ✓ Lung diseases
  - ✓ Lead poisoning
  - ✓ Radiation illness
  - ✓ Skin diseases
  - ✓ Carpal tunnel syndrome
  - ✓ Computer vision syndrome
- Hazard categories are two groups:
  - ✓ Physical and
  - ✓ Health
- Each hazard group includes hazard classes that have specific hazardous properties.
  - ✓ Physical hazards group:
    - Based on specific physical and chemical properties of the product. Example flammability, reactivity, or corrosivity to metals

1.3. Reporting Risks at work place

1.3.1. Definition of Risk Reporting

- Risk reporting is a method of identifying risks tied to or potentially impacting an organization's business processes.
- The identified risks are usually compiled into a formal risk report, which is then delivered to an organization's senior management or to various management teams throughout the organization.

1.3.2. Types of risk reporting

- A fundamental truth of risk management is that risks vary from one another in scope.
- Some risks are relatively minor in scope. For example, a minor risk might delay a project's completion by a day or two.
- Conversely, businesses might occasionally face major risks that jeopardize the wellbeing of the entire organization.
- Not only do risks vary by severity, but they can also vary in terms of their impact.
- Some risks affect a whole organization or even an entire industry.
- Other risks might only impact a single department or a particular account.
- Because risks can vary so widely from one another, there are several different types of risk reporting. Some of the more common risk reporting types includes:

I. Project risk reporting: as the lowest level of risk reporting, this pertains to risks that may affect a particular project, such as a supply chain disruption or a change in the price of raw materials.

II. Program risk reporting: in business, programs are generally made up of multiple projects. A program risk report generally covers any project-level risks or other risks that are significant enough to adversely impact the entire program.

III. Portfolio risk reporting: this is generally an aggregate summary of program-level risks across an organization's entire portfolio or collection of programs.

IV. Business risk reporting: this is used for significant risks that have the potential to impact the entire organization.

1.3.3. What should a risk report include?

- A risk report's structure can vary based on the report's intended purpose.
- For example, a risk report that outlines risks to employee safety would likely be structured differently from a report meant to convey financial risks.
- Even so, several elements commonly included in a risk report include:
  - ✓ **Executive summary:** A synopsis for senior management to identify the biggest risks.
  - ✓ **Risk profile:** A description that uses numerical values to help quantify a risk. Although these risk profiles can be created in various ways, they are often based on a risk's seriousness combined with the odds of the risk actually occurring.

- ✓ Risk capacity: A metric reflecting how much risk an organization can afford to take. For example, a risk capacity might be a worst-case statement of how much money an organization could lose without going out of business.
- ✓ Tolerance levels**:** A measurement of how much risk an organization is willing to take on. Whereas risk capacity reflects how much an organization could lose before going bankrupt, risk tolerance measures how much an organization is willing to lose. A risk tolerance value is normally much lower than its risk capacity value and is sometimes categorized as conservative, moderate or aggressive.
- ✓ **Key risk indicators (KRI):** Metrics that are tied to a risk that has been identified. If one of these metrics reaches a threshold value, it may indicate that the identified risk is beginning to happen. As such, KRIs act as an early warning system that can give management teams time to act before an identified risk can fully occur.
- ✓ **Effective risk management:** A section of the report that explains how the organization will attempt to proactively reduce or eliminate risks that have been identified.
- ✓ **Environmental risks:** Identifies risks that the organization's activities pose to the environment due to factors such as pollution. This section is not always required, depending on the type of risk report.

1.3.4. Best practices for building an effective risk report

- Some common best practices for creating an effective risk report include:
  - ✓ Include charts or other graphical elements in the report whenever possible. These can make the report easier to digest.
  - ✓ When possible, include a sunrise and sunset for each risk. The sunrise is the point at which a risk comes into play. The sunset is when an identified risk is no longer considered to be a risk. For example, in the case of making a large financial investment, the sunrise might be the time at which the contract is signed, and the sunset might be the point at which the organization has hit the break-even point for the investment.
  - ✓ Each identified risk should include a clearly written risk statement explaining the threat. If necessary, a corresponding context statement can add additional clarity. For example, this section might include KRIs explaining the significance of each indicator and what the organization plans to do if certain conditions are met.

- ✓ Each risk should also include a closure criteria statement explaining what the organization is doing in terms of risk mitigation.

1.4. Handling and using PPE

A. Definition of Personal Protective Equipment

- Personal protective equipment and clothing may act as a barrier to minimize the risk of exposure to aerosols, splashes and accidental inoculation.
- It is equipments that protects workers against health or safety risks on the job and reduces employee exposure to hazards
- Worn to minimize exposure to hazards that cause serious workplace injuries and illnesses.
- It is specialized clothing or equipment worn by an employee for protection against infectious materials.
- injuries and illnesses may result from contact with:
  - ✓ chemical
  - ✓ Radiological
  - ✓ Physical
  - ✓ Electrical
  - ✓ Mechanical
  - ✓ Other workplace hazards.
- Safety is a major concern for any laborer.
- Accidents are extremely prominent in the construction industry due to the absence or inadequate PPE

B. How do you handle PPE

- It is handling by:
  - ✓ Inspect PPE before and after each use.
  - ✓ Take care of PPE at all times.
  - ✓ Clean all PPE after use.
  - ✓ Repair or replace damaged or broken PPE.
  - ✓ Store PPE in clean dry air - free from exposure to sunlight or contaminants.

C. The Four basic elements of PPE include:

- Eye protection
- Skin protection

- Lung protection
- And hand protection.

D. Types of Personal Protective Equipment

- Essential PPE list for a Safe Industrial Workplace
  - ✓ Hard Hats. ...
  - ✓ Leggings, Foot Guards, and Safety Shoes. ...
  - ✓ Earplugs and Earmuffs. ...
  - ✓ Gloves. ...
  - ✓ Eye Protection. ...
  - ✓ Surgical Face Masks. ...
  - ✓ Respirators. ...
  - ✓ Face Shields
  - ✓ Body covers (gown)

E. Use of PPE in the work places

- The order of putting on your PPE is important;
  - ✓ Perform hand hygiene
  - ✓ Put on shoe covers (if applicable)
  - ✓ Put on gown
- Donning PPE (Putting on)
  - ✓ Put on mask/respirator (if applicable)
  - ✓ Put on eye protection (if applicable)
  - ✓ Put on gloves
- Doffing PPE (Taking off)
  - ✓ Remove shoe covers (if applicable)
  - ✓ Remove gown and gloves together*
  - ✓ Perform hand hygiene
  - ✓ Remove eye protection (if applicable)
  - ✓ Remove mask/respirator (if applicable)
  - ✓ Perform hand hygiene

1.5. Implementing Safe work practices and follows strict OHS Procedures

1.5.1. Implementing Safe work practices

A. Definition. Safe work practices are generally written methods outlining how to perform a task with minimum risk to people, equipment, materials, environment, and processes

B. Easy Workplace Safety practices are:

- Train employees well. ...

- Reward employees for safe behaviour. ...
- Partner with occupational clinicians. ...
- Use labels and signs. ...
- Keep things clean. ...
- Make sure employees have the right tools and have regular equipment inspections. .
- Encourage stretch breaks. ...
- Implement safety protocols from the start

1.5.2. Follows strict OHS

I. Prioritizing OHS at your business has several key benefits, including:

- Reduced risk or accidents or injuries by identifying and mitigating hazards.
- Improved efficiency and productivity due to fewer employees missing work from illness or injury.

II. Effectively managing OHS in your workplace

- Understand responsibilities. ...
- Consult workers. ...
- Identify, assess and control risks. ..
- Inform, train and supervise. ...
- Manage incidents and injuries. ...
- Keep records. ...
- Monitor, review and improve.

III. Appling PPE to follow strict OHS

- Wear Hard Hats: serve to protect industrial workers from head injuries caused by falling, flying, or fixed objects
- Wear Leggings, Foot Guards, and Safety Shoes: help protect workers from a range of workplace hazards including falling, rolling, or sharp objects; wet, slippery, and hot surfaces; and electrical hazards.
- Wear Earplugs and Earmuffs: used to protect workers from exposure to excessive noise, which can lead to irreparable hearing damage and increased stress.
- **Wear Gloves:** finger guards, and arm coverings will protect employees from the skin damage caused by cuts, chemical and thermal burns, and punctures.
- Wear Eye Protection: Protective eyewear is important in certain workplaces to shield employees' eyes from flying particles, hot liquids, molten metal, chemical gases, and

harmful radiation. This PPE must fit closely and comfortably to the wearer's face, be cleanable, and not restrict vision or movement.

- **Wear a surgical mask** - often referred to as a face mask - is a loose-fitting, disposable device that covers the wearer's mouth and nose to create a physical barrier between them and people in their immediate environment.
- **Wear respirators** have long been used in a manufacturing setting to protect employees from inhaling air contaminated with harmful dust, fumes, gases, or sprays. This PPE must fit closely to the face and cover the nose and mouth to be effective.
- **Wear face shields** consist of a visor, a lightweight plastic or metal frame, and a suspension system that attaches the shield to the head of the wearer. Providing full face protection, this PPE is typically worn on top of masks or goggles to prevent the inhalation of toxic substances.
- **Wear proximity sensors** are a new addition to the list of PPE, with their development spurred by the COVID-19 pandemic.
- **Wear body Shields**: In particularly hazardous conditions, workers might be required to protect their entire body. Body protection comes in the form of jackets, aprons, lab coats, overalls, and full bodysuits. They are made from a range of materials including fire-retardant wool or cotton, rubber, leather, and plastic.

Self-check 1	Written test

Name…… ID…… Date…….

Directions: Answer all the questions listed below

Test I. Much from B to A (One Points each)

	A	B
_____	1. OHS	A. Awkward postures
_____	2. Hazard	B. Gloves
_____	3. Physical hazard	C. Harm come from environmental factor
_____	4. Chemical hazard	D. Cleaning agents
_____	5. Biological hazard	E. Bacteria, yeasts, moulds and viruses
_____	6. Ergonomic hazard	F. follow strict OHS
_____	7. types of PPE	G. apply PPE to follow strict OHS
_____	8. wear eye protection	H. Lack of control and/or respect
_____	9. Prioritizing OHS	I. protecting safety, health and welfare of people
_____	10. Psychological hazard	J. Any source of potential damage

Test II. Short Answer Questions?

1. Define Occupational health and Safety? (3 Points)
2. Define safe work practice? (3 Points)
3. Mention all types of hazards? (8 Points)
4. What is PPE? (3 Points)
5. How to apply PPE to follow strict OHS? (8 Points)
6. Mention the types of risk reporting? (5Point)

Notice: Scoring rates greater than **22** point is satisfactory and less than that is not satisfactory

Operation Sheet -1

1.1. Procedures to follow sequenced written safety instructions, and record information accurately and legibly including organisational policies and procedures in OHS.

A. Tools and equipments required to perform the task

I. Overalls, Boots, helmet, gloves, protective eyewear, apron and respirator or face mask
II. Written emergency procedures, including evacuation and first aid.
III. Pointing location of first aid stations by
IV. Written health and safety responsibilities instructions
V. Reporting injuries, unsafe conditions and acts
VI. Use of personal protective equipment

B. Procedures

I. Set to be aware of emergency procedures.
II. Ready to Maintain Correct Posture
III. Take Breaks Regularly
IV. Use safety Equipment Properly
V. Locate Emergency Exits
VI. Report Safety Concerns
VII. Start the practice of effective housekeeping
VIII. Make Use of Mechanical Aids

LAP TEST-1	Performance Test

Name……ID……..Date……..

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within **4** hour. The project is expected from each student to do it.

A. Tools and equipments required to perform the task

I. Overalls, Boots, helmet, gloves, protective eyewear, apron and respirator or face mask
II. Written emergency procedures, including evacuation and first aid.
III. Pointing location of first aid stations by
IV. Written health and safety responsibilities instructions
V. Reporting injuries, unsafe conditions and acts
VI. Use of personal protective equipment

Task-1.1. Perform setting of aware of emergency procedures

Task-1.2. Perform Using of safety Equipments Properly

Task-1.3. Start Reporting Safety Concerns in the working area

Task-1.4. Start practicing of effective housekeeping from chemical spillage

LG #11	LO #2- Cleaning Animal Premises and Materials

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Preparing relevant equipment and chemicals for disinfection and sterilization
- Following Legislative and regulation on chemical usage
- Cleaning, disinfecting and sterilizing working areas and premises
- Preparing and monitoring foot baths and wheel bath
- Cleaning and disinfection of animal houses, feeding and watering trough
- Safe techniques in loading and unloading material

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Prepare relevant equipment and chemicals for disinfection and sterilization animal health care work area and premises.
- Follow chemical usage Legislative and regulation
- Clean, disinfect, and sterilize animal health care Working areas and premises.
- Prepare and monitor Foot baths and wheel bathes; at the gates of animal farms and entry of animal premises.
- Clean and disinfect animal houses, Feeding and watering trough
- minimize damage during loading and unloading material by using Correct manual handling techniques

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the information Sheets
4. Accomplish the Self-checks
5. Perform Operation Sheets
6. Do the “LAP test”

Information sheet 2.

2.1. Preparing relevant equipment and chemicals for disinfection and sterilization

2.1.1. Definition of disinfection and sterilization:

- **Disinfection:** is the process of killing microorganisms except spores by using physical or chemical disinfectant agents.
  - ✓ Physical disinfectant agents
    - Heat (two types dry and moist)
    - Moist heat
    - Pasteurization (using moist heat)
    - Autoclaving: (using moist heat)
    - Dry heat
    - Ultraviolet Light:
    - Filtration
  - ✓ chemical disinfectant agents
    - Soaps and detergents
    - Halogens (Liquid bleach or chlorine powder, Calcium hypochlorite, Iodine)
    - Alkalis (Sodium hydroxide (caustic soda) and sodium carbonate)
    - Calcium hydroxide (air-slaked lime)
    - Acids
    - Citric acid and acetic acids
    - Aldehydes (Gluteraldehyde, Formaldehyde)
  - ✓ Disinfectants are usually applied to inanimate surfaces
  - ✓ Factors that impact efficacy of disinfection are:
    - Contact time
    - Presence of organic material
    - Number and type of microorganisms present
    - Resistance of microorganisms
    - Type and concentration of disinfectant
- **Sterilization:** the process of destroying all micro-organisms including spores present on the equipment.
- Sanitation and sterilization are easier to achieve if the equipment is initially at least physically clean. Therefore, the equipment is normally cleaned before sanitation or sterilization.

- **Chemical Sterilizers: destroys all micro-organisms on previously cleaned surfaces of equipment and tools.**
- **Th**e active sterilizing ingredient is usually:
  - ✓ Iodine,
  - ✓ Chlorine
  - ✓ Nitric acid or quaternary ammonium compounds.
  - ✓ Organic sterilizers such as chloramine-T, halane and isocyanuric acids are also use
- The application of chemical sterilizer is achieved through:
  - ✓ Dusting
  - ✓ Painting
  - ✓ Sprinkling
  - ✓ Fumigating
  - ✓ Flooding

2.1.2. Preparing relevant equipment and chemicals

- Relevant Equipment and Chemicals are prepared based on the working type and activities
- There are many working activities performed with equipments and that equipment must disinfect and sterilize for that chemicals are prepared
- For different working types like:
  - ✓ Sample processing in the laboratory
  - ✓ Treating animals in the clinic
  - ✓ Husbandry management in different farms
  - ✓ Different species animal house cleaning
  - ✓ Surgical operation activities in different species
  - ✓ Gynecological operating activities in different species
  - ✓ Animal feed preparation for different species and other working activities in addition to mention in the above disinfecting and sterilizing chemicals and equipments are prepared accordingly.

2.2. Following Legislative and regulation on chemical usage

2.2.1. Chemical Production, Import, Export and Use

- There are few chemical industries and these contribute little to the national economy of Ethiopia.

- The existing chemical industries are mainly engaged in blending, mixing and packing of semi-processed chemical products and their capacity is low. Ethiopia does not export chemical products.
- The chemical needs of the country are met by imports from other countries.
- The main suppliers of chemicals to Ethiopia are the U.S.A., Italy, South Africa, Germany, England, Switzerland, Belgium, India, Japan and China.
- Record keeping of chemical production, import and use is very poor.

2.2.2. Priority Concerns Related to Chemicals

- The priority concerns related to chemicals include:
  - ✓ Air pollution, pollution of surface- and groundwater, soil pollution, pesticide residues in food, storage and disposal of chemicals, treatment of hazardous chemical wastes, control of chemical imports, emergency preparedness, and occupational safety and health in agriculture and industry.

2.2.3. Legal Instruments and Regulatory Mechanisms

- Chemical management or stringent controls in the use of chemicals presupposes the promulgation of legislation.
- The dissemination and subsequent enforcement of these legal instruments by bodies responsible for their implementation is also indispensable.
- Ethiopia has no policy on the management of chemicals.
- However, the Environmental Policy of Ethiopia treats the issue of chemical management in its broadest sense.
- In Ethiopia, legal instruments pertaining to chemical management are non-existent, overlapping or fragmented.
- Some of these instruments deal directly with chemicals or class of chemicals, while others are indirect and only provide tangential reference to chemicals.
- The legal instruments include proclamations on explosives, drugs and psychotropic substances, pesticides, radioactive substances and fertilizers.

2.2.4. Ministries, Agencies and Other Government Institutions Managing Chemicals

- Several government organs (e.g. Ministry of Agriculture, Ministry of Health, Fertilizer Agency, Ministry of Labour and Social Affairs) are entrusted with the responsibility of ensuring that laws, regulations and other operational guidelines are in place to protect humans and the environment from adverse effects due to poor chemical management.
- Overlaps in mandates in the management of chemicals for certain chemicals exist.
- Hence, there is a need to harmonize responsibilities of government institutions as far as chemical management is concerned.

2.2.5. Relevant Activities Outside of Government

- The multi-sectoral nature of chemical management dictates that key players from all interested groups collaborate and their efforts co-ordinated in order to achieve satisfactory results.
- Non-governmental organizations (NGOs), including professional bodies and workers' and employers' organizations, supplement government efforts by providing expertise in matters related to chemical management.

2.2.6. Inter-ministerial Commissions and Coordinating Mechanisms

- There are about six known inter-ministerial coordinating mechanisms in Ethiopia.
- These coordinating mechanisms are established in the form of standing national committees and boards to deliberate upon issues relevant to their member’s functional areas.
- These committees and boards facilitate co-operation and co-ordination among different government ministries, authorities, commissions, agencies, NGOs, and other relevant organizations.
- The existing co-ordination mechanisms cover various classes of chemicals including pesticides, ozone depleting chemicals, radioactive chemicals and those covered by the Chemical Weapons Convention (CWC).
- The participation of NGOs and professional associations in the existing co-ordinating mechanisms is minimal.

2.3. Clean, disinfect, and sterilize animal health care Working areas and premises

2.3.1. Definition of cleaning

- Cleaning is the process of removing visible dirt, organic matter and stains by using physical or chemical agents via the activity of:
  - ✓ Brushing (sweeping)
  - ✓ Vacuuming
  - ✓ Dry dusting
  - ✓ Washing or damp mopping with water containing a soap or detergent

- Basic Steps of a Cleaning are**:**
  - ✓ dry clean
    - Remove all visible gross contaminants from animals, vehicles, and all equipment
  - ✓ wet wash
    - Apply detergent solution onto the surface and allow sufficient time for the detergent to disperse.
    - This allows for the breakdown of the different components of accumulated stain such as fat, protein, and manure
  - ✓ Rinse
    - Thoroughly rinse the surface using a hose or pressure washer while preventing cross contamination of clean surfaces.
    - Residual detergent may interact unfavorably with the applied disinfectant.
  - ✓ Dry
    - After these steps have taken place, the area should be carefully inspected to be sure it is absolutely clean before the disinfectant is applied.
    - Then apply a standard-registered disinfectant to inactivate disease agents.
    - Follow all safety precautions and use directions specified on the product label.
    - The disinfectant must be left on surfaces for the required contact time per the label instructions.

2.3.2. Definition of disinfecting

- It is the act of applying disinfectants on equipment, tools and animal premises to reduce microorganisms by different applying methods like:
  - ✓ Dusting
  - ✓ Painting/ creaming
  - ✓ Sprinkling/spraying
  - ✓ Fumigation
  - ✓ Flooding

2.3.3. Definition of sterilizing

- It is the act of applying sterilizers on equipments and tools to all microorganisms including spore by different applying methods like:
  - ✓ Dusting
  - ✓ Painting/ creaming
  - ✓ Sprinkling/spraying
  - ✓ Fumigation
  - ✓ Flooding
- The chemical agents used both for disinfection and sterilization is based on concentration differences
- For sterilization the concentration is high and near to hundred percent while disinfection has lower concentration in general.

2.3.4. Clean, disinfect, and sterilize animal health care Working areas and premises

- Disinfection of premises consists in full and simultaneous disinfection of all the surfaces in a closed work area, by vaporisation or nebulisation of disinfectant.
- In addition to vaporising or nebulising, surfaces must be disinfected by wiping.

2.4. Preparing and Monitoring Foot baths and Wheel bath

I. Preparing the footbath

- Introduction: A footbath is a very simple form of biosecurity that helps prevent the potential spread of disease. Organisms have the potential to survive for several days or weeks in the dirt stuck to the bottom of your shoes. Footbaths can eliminate these organisms.

- To prepare it, set up each footbath station on a flat surface.
  - ✓ Fill the first plastic container with clean water for washing off any soil and plant material prior to the decontamination process.
  - ✓ Fill the second footbath with a registered decontaminant to prevent the spread of soil-borne diseases. Follow the label instructions.
  - ✓ Lay drying material after each of the clean water and decontamination footbaths.
  - ✓ Scrubbing brushes and scraping tools should be provided to guests to assist with cleaning.
  - ✓ After the footbaths have been used, dispose of the water and decontaminant away from production areas and water sources. Take note of label instructions for disposal of the decontaminant.

II. There are three simple rules when allowing visitors and workers to wear their own footwear in your production areas:

- Check all visitors and workers boots and ask where they were worn previously
- Clean footwear with a brush to remove debris, and then wash with water to remove all visible plant material and soil
- Disinfect footwear using a footbath containing a strong sanitising product. You could also use a spray bottle to treat shoes with a disinfecting solution. Be sure to follow the use instructions on the product label.



Figure 2.1. Footbath steps

Source: (https://www.farmbiosecurity.com.au/biosecurity-basics-make-your-own-footbath/ Access Date 30.08.2022)

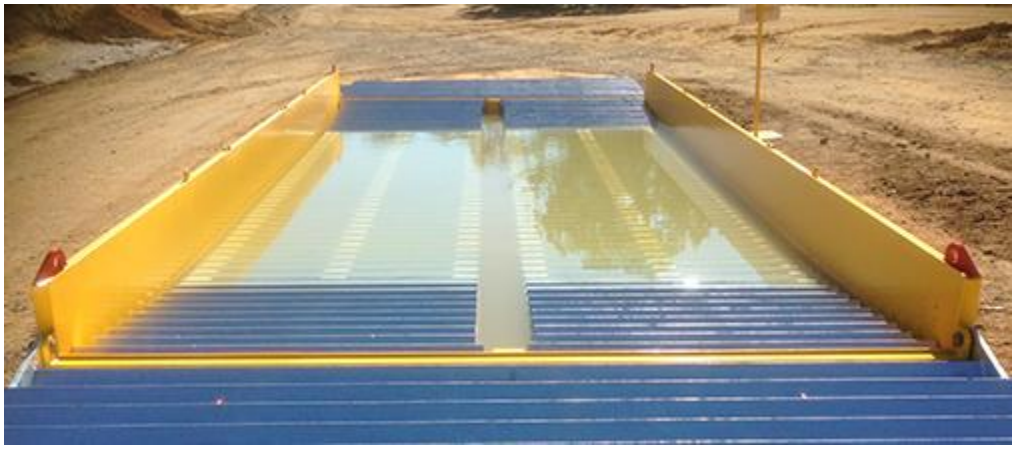


Figure 2.2. Wheel bath for disinfection

Source: (https://www.wawheelwash.com.au Access Date 30.08.2022)

2.5. Cleaning and disinfection of animal houses, Feeding and Watering Trough

2.5.1. Cleaning animal houses

- Concrete or Wooden Construction
  - ✓ All surfaces must first be thoroughly cleaned of all fecal material and organic debris.
  - ✓ Any bedding must be burned or buried.
  - ✓ If the disease was reportable the directions of the regulatory agent in charge should be followed.
  - ✓ The walls and floors should be scrubbed with a hot detergent cleanser solution.
  - ✓ A steam cleaner may help, but it does not take the place of mechanical scrubbing.
  - ✓ If there are no painted surfaces within the enclosure complete the cleaning with the application of a hotly solution.

2.5.2. Cleaning and Disinfection Broiler Poultry Houses, Feeding and Watering Trough:

- The first step in cleaning and disinfection of a poultry house is to treat the poultry house to eliminate litter beetles and flies.
- Some producers treat the house after birds are removed from the house before the insects have a chance to move in.

- Others prefer to wait until the litter has been removed and apply the approved pesticide as part of the wash down procedure.
- If a residual soil treatment is used, it should be applied to the dirt floors after the completion of all cleaning and disinfecting and before fresh litter is put down.
- Whatever litter beetle pesticide is used the label directions of the product must be followed exactly.
- Follow all manufacturers‟ directions.
- Next, remove all moveable equipment from the house.
- Clean and then disinfect this equipment and leave it outside to dry in the sun while completing the rest of the cleaning and disinfection.
- All litter/manure must then be removed from the house. If the litter/manure is stored on the premises, it should be moved as far away from the houses as possible, at least a minimum of 100 yards.
- The litter/manure should be covered with plastic if it is to be stored for more than a few days.
- The litter should be composted if possible.
- After the litter has been removed, the dust and dirt should be removed from the walls, ceilings, curtains, fan blades, louvers, equipment, etc.
- After removing the litter and any remaining dust and debris, the house should be thoroughly washed.
- The washing procedure is best performed using a high-pressure spray washer.
- High-pressure washers can damage ceilings and curtains.
- Add detergent to the water to increase the water’s cleaning action.
- Make sure the detergent used is compatible with the compound subsequently used for disinfection.
- The water temperature in the sprayer should be at least 200ºF to aid in the killing of any microbes.
- Fan motors, switch boxes, outlets and other electrical equipment should be covered before washing down the house to prevent burn-out of equipment and possible electric shock and fires.
- Clean these types of equipment with a blower, dry brush, or rag before them.
- Start at the top of the house and work down.
- It is crucial to remove all dust, dirt, litter, and manure from the house

- Ledges, braces, air intakes, and all other places where dust, dirt, feathers, and waste accumulate must be cleaned.
- Most disinfectants are less effective if used in the presence of organic material.
- The dirt and fecal material bind the disinfectant that would otherwise be available to kill the microorganisms that cause disease.
- All disinfectants work best on a clean surface.
- Fumigants have been used in the past to disinfect poultry houses.
- Today, there is some concern over the safety of many of these products as some, such as formalin, are quite poisonous or carcinogenic.
- Great care must be used when using fumigants.
- Label directions must be closely followed.
- Only products that are approved for poultry house disinfection should be used.
- Fumigation is most effective when the house can be closed airtight.
- Disinfection of the house comes after cleaning has been accomplished.
- There are numerous types of disinfectants that can be effective when used properly.
- The most accepted types of disinfectants for poultry houses are synthetic phenols, coal tar distillates, and quaternary ammonia compounds.
- These compounds are best suited for use because they are not as susceptible to deactivation by organic material, and they are relatively non-corrosive to equipment.
- Even within these families of disinfectants, some are more effective than others when organic debris is present.
- Whatever disinfectant is used the label directions must be read and followed exactly, and the product used in the manner for which it is intended.
- In most cases, the best way to apply a disinfectant is by spraying or foaming it on with a medium pressure sprayer.
- Steam cleaning (at 285ºF) with water alone is also a very effective way to disinfect if the necessary equipment is present.
- After disinfecting, allow the house to dry completely.
- All feeders, hoppers, and feed bins must be thoroughly cleaned and disinfected.
- Scrape and scrub the feeding system to completely remove all the old feed.
- Also, remove the feed bin boot and clean out any remaining feed.

- Clean the bin with a high-pressure sprayer and then disinfect it with a 10% chlorine bleach solution.
- The boot can be left off until the bin is completely dry, but it must be reassembled before the first feed delivery arrives.
- Water lines must be flushed out and any tanks, proportioners, medicators, etc., must also be cleaned and disinfected.
- Fresh air and sunlight are excellent at reducing the numbers of microbes present.
- Let as much light and air into the house as possible during the down time. No wild birds or any other animals should be allowed to enter the house at any time, but especially after it has been disinfected.
- Wild birds and other animals can carry viruses and bacteria on their fur and feathers and decontaminated the house, negating the effects of cleaning and disinfecting.
- In addition to cleaning and disinfecting the inside of the house, the immediate area around the exterior of the house must also be cleaned and disinfected.
- Keeps vegetation surrounding the poultry structures trim short.
- Disinfect 10 feet around the outside of the buildings.
- Clean and disinfect entrances to the house.
- These areas must be as free of litter/manure and feathers as possible.
- The following is a summary checklist for cleaning and disinfecting a broiler house:
- Treat the house for litter beetles, flies, and rodents Remove all removable equipment Clean and disinfect the removed equipment; and store in a sunny location.
- Sweep out all litter and manure from the house.
- Wash down the house completely from top to bottom.
- Cleanse and disinfect the watering system and the entire feeding system from the bins to the pans.
- Fumigate the house if necessary and follow the manufacturer’s directions.
- Spray the entire house with a disinfectant approved for use in poultry houses.
- The house and equipment should be completely dry before returning the equipment to the house.
- Allow at least 12-14 days down time between flocks before introducing new birds back into the house.

- Bringing birds back into the house prematurely will increase the chance of cycling diseases from flock to flock

2.5.3. Cleaning and Disinfection Poultry layer house: Houses, Feeding and Watering Trough

- A complete cleaning and disinfection between each brood of pullets is highly recommended.
- Cage layer houses and equipment must be thoroughly cleaned and disinfected after each flock is removed from the premises and before a new flock is introduced.
- Again, the information for broiler houses will also apply here with notable exceptions to the type of equipment that is used.
- Remove any manure from the house and place it as far away from the house as possible or a minimum of 100 yards.
- Cover dry manure and compost it if possible.
- Runoff from manure piles should not be allowed to contaminate the driveways or entrances to the poultry houses.
- Sweep the house from top to bottom to remove cobwebs, feathers, etc.
- Institute vermin control. Floors, lighting fixtures, fan blades, air inlets, louvers, beams, ledges, walls, cages, and walkways must be thoroughly cleaned.
- Burned out light bulbs should be replaced and all other bulbs should be cleaned. Clean the facility by working from top to bottom.
- A pressure sprayer is recommended for cleaning.
- A pressure of 750-2,000 psi is recommended but at this high pressure special care and personal protective garments are needed as this pressure can cut human skin.
- Care must be taken to follow the manufacturer's instructions for the use of the pressure sprayer.
- Use sprayer attachments and nozzles that permit washing of hard-to-reach areas. Wash the ceilings, walls, walkways, steps and cross-over platforms, egg rollers, all egg conveyors, cross belts, floors under conveyors, stairs to the pit, outside stairs, and concrete pit floors.
- Clean everything completely.
- Special attention must be paid to clean and disinfect not only the top, but also the underneath sides of troughs and the surfaces of all chains and augers.
- Extreme care must be given to the egg elevator.

- Check for cleanliness from every angle possible, especially from the underside of the pit and from behind rollers.
- Remove all traces of egg breakage and spillage.
- If slats are used they should be removed and taken outside of the house for cleaning.
- They should be scraped of any manure, pressure washed to remove any residual material, disinfected, and left outside to dry in the sun.
- Any removable equipment should be taken outside, cleaned thoroughly, and then disinfected and allowed to dry in the sun
- Wash egg rooms, storage rooms, egg coolers, hallways, break, wash and restrooms.
- Manually clean any areas that have resisted prior cleaning.
- Cover both sides of the curtains completely and thoroughly with spay to remove dirt, dust, and down.
- The curtains should be up and completely extended when cleaning and spraying. When dry the curtains may be dropped.
- The house should be allowed to air out completely.
- After thoroughly cleaning the ceiling, curtains, wall, partitions, cages, feeders, waterers, and other equipment, they must all then be disinfected.
- Disinfection should occur within 24 hours of cleaning.
- The disinfectant should be applied at the rate recommended by the container label.
- Care should be taken not to get any water or spray into electric motors
- Use of pressure sprayers is advisable to help force the disinfectants into wood pores, cracks, and crevices that protect microorganisms.
- Spray pressures of 500-1,000 psi have been suggested.
- Work from back to front and from top to bottom.
- Dirt floors are almost impossible to fully disinfect.
- In situations where dirt floors could not be concreted, disinfectant has been applied to the floor at the rate of one gallon diluted disinfectant per 10 square feet.
- Clorox has been used for this purpose.
- Disinfect egg-handling equipment (elevators, egg belts, etc.) in accordance with recommendations provided by equipment and disinfectant manufacturers.

- The use of steam, vats of water at pasteurization temperatures, or soaking in disinfectant to disinfect egg belts has been suggested but not fully evaluated for effectiveness or harmful effects on the belt.
- After the facility has been disinfected, it must be dried. Space heaters have been used to speed the drying process in cold or damp weather

2.6. Safe techniques in loading and unloading material

2.6.1. Safe Techniques of Material Handling Equipments

- Safe Techniques of material handling equipment is designed to move, store, retrieve, and control raw materials and finished goods.
- Although safe material handling is not used for processing, packaging or labeling, this category covers tools and containers as well as devices for preparing, loading, securing, moving, and unloading material.
- Types of material handling equipment include:
  - ✓ Transportation equipment,
  - ✓ Positioning equipment
  - ✓ Load formation equipment
  - ✓ Storage and retrieval equipment
  - ✓ Transport equipment is a broad category of material handling equipment for moving¬ good and materials from one location to another
  - ✓ Positioning equipment for material handling is used to move and position loads
  - ✓ These material handling systems consist of components such as belts, controls,¬ chains, rollers, and sprockets.
  - ✓ Industrial cranes are designed to raise and lower loads. Industrial trucks range from hand trucks and pallet jacks to automatic guide vehicles (AGVs) and order pickers

2.6.2. Safe Techniques of Loading and Unloading Materials

- When loading or unloading materials, the work area shall be clear.
- When loading or unloading from a truck, the brakes will be applied and wheel chocks shall be placed.
- When unloading from a trailer, chock and lock the trailer legs.
- When unloading or loading materials using hoisting equipment, tag lines shall be used to guide materials onto trucks or off trucks.
- When backing to unload materials or load materials, a person shall be used to guide the truck into place.

Self-check 2	Written test

Name…… ID…… Date…….

Directions: Answer all the questions listed below

Test I. Much from B to A (One Points each)

	A	B
_____	1. Soap	A. poultry house disinfection agent
_____	2. autoclave	B. detergent
_____	3. formalin	C. sterilizer
_____	4. Chemical hazard	D. Cleaning agents
_____	5. Microbiological hazard	E. Bacteria, yeasts, moulds and viruses
_____	6. Ergonomic hazard	F. Unintended presence of food
_____	7. Environmental hazard	G. Confined spaces
_____	8. Safety hazard	H. Lack of control and/or respect
_____	9. Allergens	I. protecting safety, health and welfare of people
_____	10. Work organizational hazard	J. Any source of potential damage

Test II. Short Answer Questions (Time allowed 50 minutes)

1. Define Disinfection? (3 Points)
2. What sterilization? (3 Points)
3. Mention all cleaning steps? (8 Points)
4. Define cleaning? (3 Points)
5. What is disinfecting? (3 Points)
6. What is sterilization? (3 Points)
7. What is loading and unloading? (3 Points)
8. What are the chemical regulations and legislations in Ethiopia? (3 Points)
9. Mention poultry house clearing activities? (3 Points)
10. What are the safe techniques of loading and unloading? (3 Points)

Notice: The scoring rates greater than 22 are satisfactory and less than that is not satisfactory?

Operation Sheet -2

2.1. Prepare footbath in the entrance of poultry house.

A. Tools and equipments required to perform the task

I. disinfectant
II. Plastic format fake grass type
III. Plastic pan
IV. Foot brush

B. Procedure to perform

I. Put plastic pan on side of entrance
II. Put fake plastic mat in the plastic pan
III. Add disinfectants with appropriate proportion with water
IV. Ask visitors to brush their shoes and bath

LAP TEST-2	Performance Test

Name……ID……..Date……..

Time started: _____ Time finished: _____

Instructions: prepare poultry house endurance footbath within **4** hour with using the following tools of plastic pan, fake plastic mat, and disinfectant foot bath brush.

Task-2.1. Prepare footbath.

LG #12	LO #3- Routine animal care and cleaning activities

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Animal body grooming
- Hoof pecking, trimming, debeaking and shearing
- Animal feed inspection

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Perform animal body grooming
- Perform hoof pecking and trimming in equine, ruminants and camel, debeaking in chicken, wool shearing for sheep
- Inspect and maintain animal feed free from gross contamination, mould, sharp and indigestible objects.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the information Sheets
4. Accomplish the Self-checks
5. Perform Operation Sheets
6. Do the “LAP test”

Information sheet 3.

3.1. Animal body grooming

- Introduction: Grooming removes dirt, insects, parasites, dead skin, tangled fur, and generally help to keep an animal's skin and hair in good condition. Thus being groomed benefits an animal's physical condition and health, making well groomed animals more fit as a result
- So**me animals groom themselves like:**
  - ✓ Birds remove dirt and insects from their feathers by taking dust baths. After wallowing around in the dust, they shake dirt and tiny invaders from their bodies. They also preen (clean) their feathers with their beaks. Elephants, rhinos and other mammals take baths by rolling in dust and mud
- **Brushing your dog gets**
  - ✓ Ventilates their coat, helping it grow healthy and strong and takes away old and damaged hair. Grooming also ensures that your dog's skin can breathe and keeps down the level of grease in their coat. Too much grease can block pores and cause irritation and all sorts of skin problems

3.2. Hoof pecking, trimming, debeaking and Wool shearing

- **Hoof pick definition:** a hooked implement used to remove foreign objects from a hoof. Picking involves use of a specialized tool to remove any dirt, rocks, nails, or debris that become trapped in the areas around the frog
- **Does hoof picking hurt the horse?**
  - ✓ Basically, unless you really try and you know where to push, you won't hurt the horse. Cleaning and inspecting the hoof daily is incredibly important. Do it and do it often. If you focus on the collateral grooves on either side of the frog, you'll get the most important areas cleaned quickly.
- **Why Picking a Horse's Hooves Is Important**?
  - ✓ Horse's hooves are prone to picking up bits of gravel, dirt, and debris on a regular basis, especially if they are out on the trail, in a paddock, or pasture. If the hooves are not picked, these pieces of gravel or debris can lead to discomfort, infection, and lameness

- **In addition, picking the hooves helps a horse owner to identify puncture wounds or other problems with a hoof at the earliest stage.**
- **A horse** that is being ridden on a regular basis should have its hooves picked and cleaned before and after each ride. Other horses should have their hooves picked daily, if possible, or at least a couple of times each week so any hoof problems are caught in the earliest stages.
- Picking involves use of a specialized tool to remove any dirt, rocks, nails, or debris that becomes trapped in the areas around the frog. A final swipe with a brush removes any remaining dust or dirt from the hoof.
- Follow these 3 basic steps to do a thorough cleaning of your horse's hooves:
  - ✓ Pick up the horse's foot so that the bottom can be seen clearly. Stand near the horse's left front leg, facing its rear, and run your left hand down the horse's leg, toward the pastern. Some horses will pick up the foot automatically, but others need a little more physical involvement. In this case, lean your left shoulder against the horse's shoulder, encouraging it to shift the weight to the opposite leg. Gently squeeze the back of the leg. Given a little pressure, most horses will then pick up the foot, enabling you to cradle the foot in your hand. Keep the angle of the leg natural and don't bend it off to the side.
  - ✓ To clean out the inside of the hoof, take the pick in your right hand and, pointing the pick away from you, scrape out any dirt or manure with the tip of the pick, paying special attention to the sole and frog. Clean the areas around the frog, but don't scrape it. Look carefully for any debris, small rocks, or objects that need to be dislodged. As you pick the hoof, inspect it carefully for any punctures, injuries, or signs of infection. Now, it's time to brush the hoof to remove all traces of dirt or manure.
  - ✓ Once the left front hoof is picked and cleaned, move to the hind leg on the left side and repeat the picking, cleaning, observing, and brushing. Typically, tradition has the picking and cleaning rotation start from the front left hoof, continue to the hind left hoof, then to the right hind hoof, finishing with the right front hoof. When working on the horse's right side, it is usually easiest to hold the hoof in your right hand and do the picking and cleaning with your left hand.



Figure 3. 1. Using special tool to pick hoof

Source: (https://equimed.com/health-centers/hoof-care/articles/the-importance-of-picking access date, 30.08.2022)

- **Hoof Trimming definition:**
  - ✓ The basic objectives of hoof-trimming are to balance the weight bearing between the inner and outer claws, correct the altered displacement of weight from heel to toe in overgrown claws, return the claws to normal shape and proportions, and to find and correct early lesions.
- Follow hoof-trimming process in the following steps to trim your horse's hooves the right way:
  - ✓ Step 1: Moisten the hooves. ...
  - ✓ Step 2: Position the horse's leg. ...
  - ✓ Step 3: Clean the hoof. ...
  - ✓ Step 4: Cut off the overgrown outer hoof wall. ...
  - ✓ Step 5: File down the hoof wall. ...
  - ✓ Step 6: Cut dead flesh on the sole and frog.
- **Importance of hoof trimming:** Regular trimming also reduces the chance of infectious and non-infectious hoof lesions from developing. Overgrown hooves are a risk factor for developing hoof conditions such as foot scald (interdigital dermatitis), which can lead to foot rot or foot abscess

- Definition of debeaking: to remove the tip of the upper mandible of (a bird, such as a chicken) to prevent cannibalism and fighting.
- Debeaking in poultry is beak trimming is the removal of part of the top and bottom beak of a bird. It is also called “debeaking”, although this term is inaccurate as only part of the beak is removed. It is an animal husbandry practice commonly carried out in the poultry industry.
- The purpose of doing this is to prevent:
  - ✓ Feather pulling
  - ✓ Cannibalism
  - ✓ To reduce feed wastage.
- Beak trimming is most common in egg-laying strains of chickens.
- In some countries, such as the United States, turkeys routinely have their beaks trimmed.
- In the UK, only 10% of turkeys are beak trimmed.
- Beak trimming is a preventive measure to reduce damage caused by injurious pecking such as cannibalism, feather pecking and vent pecking, and thereby improve livability.
- Commercial broiler chickens are not routinely beak trimmed as they reach slaughter weight at approximately 6 weeks of age, i.e. before injurious pecking usually begins. However, broiler breeding stock may be trimmed to prevent damage during mating.
- In some countries, beak trimming is done as a last resort where alternatives are considered not to be possible or appropriate
- Definition of shearing of a sheep: is the act or occasion of cutting the wool of sheep.
- Wool shearing: sheep shearing is the process by which the woolen fleece of a sheep is cut off. The person who removes the sheep's wool is called a shearer. Typically each adult sheep is shorn once each year (a sheep may be said to have been "shorn" or "sheared", depending upon dialect)
- The use of wool is until now, sheep wool has traditionally been used in the textile industry for the manufacturing of conventional woolen products, such as carpets, garments, curtains, covers, and bedding. More recently, they have also been used in the building industry due to their thermal properties
- The process of cutting off the woolen fleece of sheep with a thin layer of skin is called shearing. Once a sheep develops a thick coat of hair, it is shaved off to obtain wool. It is done by the machines similar to those used by barbers to remove our hair.

3.3. Animal feed inspection

3.3.1. Animal feed Testing and Inspection

- Intertek provides inspection and testing of animal feeds, in the field and in the laboratory. Services include animal feed analysis, quality, nutritional value, formulation, contamination investigation and more. Intertek is an approved provider of the new certification services imposed by the Ethiopian MoT, and can provide exporters and importers with further information on the new standard requirements as well as delivering the necessary testing and certification services.
- **Animal feed tests and methods:**
  - ✓ Amino Acid
  - ✓ Ash
  - ✓ Calcium
  - ✓ Chloride/Salt
  - ✓ Carbohydrates, Calculations
  - ✓ Drugs, Antibiotics
  - ✓ Fat, (Ether Extract)
  - ✓ Fat, Acid Hydrolysis
  - ✓ Fiber, Crude
  - ✓ Moisture,
  - ✓ Minerals, (Metals) Atomic Absorption
  - ✓ Microscopic Analysis, Microscopic
  - ✓ Melamine Detection,
  - ✓ Phosphorus,
  - ✓ Protein
  - ✓ Pepsin Digestibility
  - ✓ Sugar
  - ✓ TDN, Total Digestible Nutrients Calculations
  - ✓ Calories, Calculations
- Types of animal feeds tested include livestock and cattle feed, aquaculture feed, chicken feed, deer feed, fish feed, hog feed, horse feed, organic poultry feed, pet food, pig feed, poultry feed, prawn feed, shrimp feed, swine feed and more.

3.3.2. Animal feed inspection

- Inspection is performed by taking samples of animal feed. Samples are collected in feed mills, distribution points, and on farms then are forwarded to the State, Food and Drug Administration (FDA) or contracted laboratories services for analysis. The sample collected must be representative of the product sampled to provide a meaningful result upon analysis.

The technique of sample collecting is crucial to the accuracy of the laboratory findings along with any possible administrative actions based upon the results.

A. Sampling safety Cup-Type Samplers (Stream Cutters) Cup-type samplers (stream cutters) should be used with care. Be cautious of reaching too far across the stream. Keep a firm footing. Sampling should be restricted to areas where sufficient room is available to properly swing the device through the feed stream without the possibility of the cup hitting or becoming entangled in spouting.

B. Sampling Bagged or Packed Products Obtaining samples during the bagging or packaging process requires the Inspector to be constantly alert. Loose fitting jewelry should be removed and kept in your pockets. Check-weighing requiring the removal of bags or packages from the line can cause injury. Be alert for the movement of forklifts used to move the commodity. Stacked paper or polypropylene bags are slick and fall easily. When sampling stacked or containers on pallets and a ladder are required, check the condition of the ladder. Note Special Handling Precautions Concentrated sources of medications, vitamins, minerals or other products may have precautions and warnings included on the product label. Review all labeling prior to beginning your sampling procedure. Follow ALL precautions indicated on the label. Sampling concentrated sources may result in airborne dust. Also, grains may have mycotoxins present causing exposure through dust. Even if no “toxins” are present, there may be potential harm from inhalation of mold spores or from allergic response to inhaled dust. Use proper safety precautions. If you have questions, contact your supervisor prior to obtaining samples.

C. Man lifts & cage elevators most mills and elevators have elevating devices to transport personnel from lower to upper working levels. They are normally cage-type or continuous vertical belt-types.

- A feed sample may also be collected to ensure that:
  - ✓ The feed is of composition, quantity, or quality as represented by the label
  - ✓ The feed is not moldy, sour, heated, or contains a poisonous or deleterious substance that may render it injurious to animals under ordinary conditions of use
  - ✓ An ingredient has not been omitted or extracted in whole or in part
  - ✓ The product is not concealing a diseased, filthy, putrid, or decomposed substance, unless the substance has been rendered harmless by sterilization or other effective process
  - ✓ Substances have not been added, mixed or packed to deceptively increase its bulk or weight, reduce its quality or strength, or make it appear of greater value than it is
  - ✓ The documentation of distribution

- ✓ Part of a survey of products for a specific issue such as checking for levels of a particular ingredient, checking for levels of pesticides or mycotoxins
- ✓ Confirm a suspected violation
- ✓ Help determine or eliminate a suspected cause of an injury or death
- ✓ Evidence to support a regulatory action; and
- ✓ Information to develop, enhance or revise a regulatory program.

- Feed sample is collected by removing the forage to a grazing height from a 1 square foot area at each location. Chop the sample into three inch pieces and quarter to reduce sample size. Place in a plastic bag, exclude air and seal tightly. Ship samples promptly.
- Sampling is the most important factor affecting accuracy of feed analyses. guide emphasizes sampling of hay and silage. Samples must closely resemble the entire "lot" of for- age. In addition, each sample must represent only one "lot" of forage

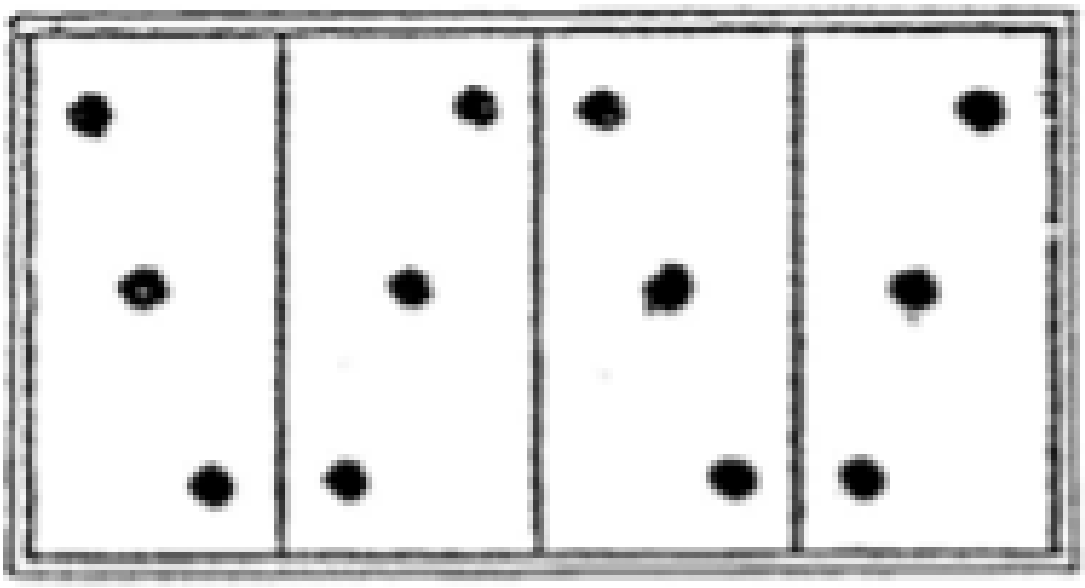


Figure 3.2. Sampling pattern

Source: (AAFCO, 2014)

Self-check 3	Written test

Name…… ID…… Date…….

Directions: Answer all the questions listed below

Test I. Much from B to A (One Points each).

	A	B
_____	1. Brushing your dog	A. hoof hook
_____	2. hoof picking	B. Animal body grooming
_____	3. use of wool	C. Carpets

Test I. Short Answer Questions (Time allowed 50 minutes)

1. Define Hoof picking? (3 Points)
2. What Hoof trimming? (3 Points)
3. Mention all feed sampling methods? (8 Points)
4. Define debeaking? (3 Points)
5. What is Wool shearing? (3 Points)
6. What is the importance of hoof trimming? (3 Points)
7. What is animal grooming? (3 Points)
8. What is animal feed inspection? (3 Points)

Notice: The scoring rates greater than **22** are satisfactory and less than that is not satisfactory?

Operation Sheet -3

3.1. Perform domestic animal grooming within a given 3 hours.

A. Tools and equipments and animals required to perform the task

I. Brush

II. restraining tools based o species

III. soap

B. Procedure to perform the task

1. Restrain the animal
2. Wash with soap
3. Brush the animal body accordingly based on species

LAP TEST-3	Performance Test

Name……ID……..Date……..

Time started: _____ Time finished: _____

Instructions: prepare one of the domestic animals available and ready by restraining for grooming within the given **4** hour with using the following tools of brush, restraining tools and soap.

Task-3.1. Perform the task of animal grooming?

LG #13	LO #4- Waste management activities

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Selecting and using PPE
- Identifying and classifying wastes
- Collection, storage and removal of wastes
- Waste segregation and treatment before elimination
- Disposal methods of wastes

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Select and use appropriate PPE
- Identify and classify wastes in groups based on waste management principles general
- Carry out collection, storage and removal of different groups of wastes
- Identify wastes that require prior treatment before removal/elimination
- Dispose wastes in different ways depending on the groups of waste

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the information Sheets
4. Accomplish the Self-checks
5. Perform Operation Sheets
6. Do the “LAP test”

Information sheet 4.

4.1. Selecting and using PPE

4.1.1. How to select and check suitable PPE prior to use.

- Workers must alert supervisors of hazards in the workplace
- Workers must wear the appropriate PPE to protect themselves from any hazards.
- Personal protective equipment (PPE) is used by workers in various work settings.
- Gloves, hard hats, safety glasses, ear plugs, aprons, laboratory coats, safety shoes, and respirators are all examples of PPE.
- When a hazard cannot be removed from the workplace, or when engineering controls are insufficient to control the hazard, PPE must be considered.
- PPE does not eliminate hazards from the workplace but places a barrier between the worker and the hazard.
- If the PPE fails or is not used properly, the worker will be exposed.
- There is a large variety of PPE available.
- It can range from simple safety glasses to full body suits.
- The selection and proper use of PPE is vital to health and safety on the job.
- The following is a current list of PPE recommended for use with minimum requirements
- All employees entering work areas are required to abide by the following minimum requirements, depending on the work activity in which they are involved:
    - ✓ Full length pants
    - ✓ Long or short sleeved shirts (no tank tops)
    - ✓ Footwear that covers the toes
    - ✓ Long hair tied securely back
    - ✓ Respiratory protection, if required
    - ✓ Removal of all jewelry when using barrier protection
    - ✓ Protective gloves required for activities where potential for hand injury exists
    - ✓ Hearing protection if there is a potential for noise exposure

4.1.2. Factors Affecting Selecting and Using PPE

- Working activity /the nature o the work
- Size /fitness
- Appropriateness/ durability

4.2. Identifying and classifying wastes

4.2.1. Definitions of wastes

- Waste (also known as trash, rubbish, refuse, garbage, junk, litter and ort) is unwanted or useless material.
- The Medical Waste: any solid waste that is generated in the diagnosis, treatment, researching or immunization of human beings or animals.
- Types of medical Waste those include:
  - ✓ Infectious waste:
    - causing infections to humans
    - examples Human or animal tissue (blood or other body parts)
    - blood soaked bandages
    - discarded surgical gloves
    - Cultures or swabs to inoculate cultures
  - ✓ Hazardous waste: the possibility to affect humans in non infectious ways. This type of waste includes:
    - Sharps instruments such as Needles, syringes, scalpels lancets, culture dishes and other glassware.
    - Hazardous waste can also include chemicals, both medical and industrial.
    - Some hazardous waste can also be considered infectious waste, depending on
    - Its usage and exposure to human or animal tissue prior to discard.
  - ✓ **Radioactive waste**: waste resulting from nuclear medicine treatments, cancer therapies and medical equipment that uses radioactive isotopes.
    - Pathological waste that is contaminated with radioactive material is treated as radioactive waste rather than infectious waste.

- General waste makes up at least 85% of all waste generated at medical facilities, and is no different from general household or office waste, and includes paper, plastics, liquids and any other materials that do not fit into the previous three categories
- Mislanious waste types are Chemical waste (sterilants and disinfectants, photographic chemicals, disinfectant, detergent and steriliser, formaldehyde.
- Offensive waste (disposable masks, aprons, gloves and overshoes and absorbent pads, animal faeces, animal bedding and animal cadaver).
- sharps (needles, scalpels and blades
- Infectious waste (contaminated dressings, disposable gowns, clinical gloves, contaminated PPE).
- Pharmaceutical waste includes (vaccine bottles, empty injection bottles, syringes, whole medicines).

4.3. Collection, Storage and Removal of Wastes

- Waste collection is a part of the process of waste management. It is the transfer of solid waste from the point of use and disposal to the point of treatment or landfill.
- Community: householders and businesses put waste out for collection, and paid workers collect the containers and take them to a community composting, recycling or disposal site.
- There might be door-to-door collections, or communal containers placed near the road, marketplace or other public area
- Waste management is important as it saves the environment from the toxic effects of inorganic and biodegradable element present in waste
- Mismanagement of waste can cause water contamination, soil erosion and air contamination. Waste can be recycled if collected and managed efficiently.
- Types of Waste Management
  - ✓ Recycling.
  - ✓ Incineration.
  - ✓ Landfill.
  - ✓ Biological Reprocessing.
  - ✓ Animal Feed.

- **Waste Storage**
  - ✓ Storage is defined as holding hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere
  - ✓ Store materials in a planned and orderly manner that does not endanger employee safety.
  - ✓ Ensure stacks, tiers, and piles are stable and stacked to aid safe handling and loading.
  - ✓ Store hazardous materials in accordance with the individual requirements.
  - ✓ Storage Requirements when storing hazardous waste or recyclables, containers must be:
    - In good condition and not leaking Protected from the weather
    - Compatible with the materials they are storing to avoid corrosion or
    - chemical reactions that could result in fire Kept closed except when adding waste
    - Not opened, handled or stored in ways that could cause leaks or ruptures
    - Clearly marked and labelled to identify what is being stored
  - ✓ In addition, the following requirements and precautions should be taken:
    - Clean up any spills immediately Do not store incompatible wastes together
    - Have in place secondary containment for liquid hazardous
    - Waste/recyclables Use separate containers and appropriate barriers between different wastes
    - To prevent contact in the event of a release Inspect waste and recyclables in storage weekly and note any deterioration
    - Or corrosion in an inspection log
  - ✓ Stored materials should allow at least one meter (or about 3 feet) of clear space under sprinkler heads.
  - ✓ Stacking cartons and drums on a firm foundation and cross tying them, where necessary reduces the chance of their movement.
  - ✓ Stored materials should not be obstruct aisles, stairs, exits, fire equipment, emergency eyewash fountains, emergency showers, or first aid stations
  - ✓ All storage areas should be clearly marked. Manure should be stored outside confinement buildings above ground, uncovered¬ and enclosed by an adequate fence.
  - ✓ Store away hay ropes and pitchforks to avoid accidental hangings and puncture
  - ✓ Wounds Storage equipment, as the name suggests is used to store materials, components and assemblies.

- ✓ The level of complexity of this type of equipment is wide ranging, from a welded
- ✓ Waste storage areas must be kept free from accumulation of materials that create hazards from:
  - Tripping
  - Explosion
  - Fire
  - Pest harborage

- One of the bigger reasons to reduce waste is to conserve space in our landfills and reduce the need to build more landfills which take up valuable space and are a source of air and water pollution. By reducing our waste, we are also conserving our resources.
- The process of waste removal is a waste management system is the strategy an organization uses to dispose, reduce, reuse, and prevent waste. Possible waste disposal methods are recycling, composting, incineration, landfills, bioremediation, waste to energy, and waste minimization.

4.4. Waste segregation and treatment before elimination

- When we segregate waste, it reduces the amount of waste that reaches landfills, thereby taking up less space. Pollution of air and water can be considerably reduced when hazardous waste is separated and treated separately. It is essential that waste is put in separate bins so that it can be appropriately dealt with
- The very first step in the management of waste disposal is the collection of waste. The accumulated waste heaps should be first sorted out and separated. For example, Dry waste, Wet waste, plastics, paper waste etc, every type of waste should be separated out according to the nature of the waste product
- "Waste segregation" means dividing waste into dry and wet. Dry waste includes wood and related products, metals and glass. Wet wastes typically refer to organic waste usually generated by eating establishments and are heavy in weight due to dampness. Waste segregation is different from waste sorting.
- Here are some easy tips when we start waste segregation at home
  - ✓ Step 1: Classify the category of waste. Each country has a different waste category. ...
  - ✓ Step 2: Labelling. ...
  - ✓ Step 3: Separate the residual waste. ...
  - ✓ Step 4: Cleaning before sorting. ...
  - ✓ Step 5: Compact to collect more

- In general, waste should undergo material recycling or thermal treatment.
- If this is not possible for technical reasons, or it is not economically viable, the waste is deposited in a landfill following suitable treatment

4.5. Disposal methods of wastes

- There are eight major groups of waste management methods, each of them divided into numerous categories. Those groups include source reduction and reuse, animal feeding, recycling, composting, fermentation, landfills, incineration and land application
- General Treatment and disposal methods are
  - ✓ Dumping and landfill
  - ✓ Incineration/burning
  - ✓ Compaction
  - ✓ Burying
  - ✓ Biogas generation
  - ✓ Composting
- But the best way is to reduce, reuse and recycle wastes.

Self-check 4	Written test

Name…… ID…… Date…….

Directions: Answer all the questions listed below.

Test I: define the following (4 point)

1. PPE
2. Waste
3. Waste collection
4. Storage
5. Waste removal
6. Waste disposal methods
7. Waste segregation

Test II: Short Answer Questions (12 points each)

1. How to segregate waste
2. Mention all types of PPE

Notice: The scoring rates greater than **20** are satisfactory and less than that is not satisfactory?

Operation Sheet 4

4.1 Procedures of waste collection segregation and storage techniques

A. Tools and equipments

II. Eye goggle
III. Respirator
IV. Face shield
V. Gown
VI. shoes
VII. gloves
VIII. waste pin
IX. landfill/container

B. **Procedure to perform waste collection**

1. Clean the waste
2. Collect the waste
3. Segregate the waste
4. Storage the waste
5. Compact the waste
6. Labeled the container
7. Ready to reuse/burn/incinerate/bury after transportation to on site or off site waste disposal sites

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LAP TEST 4	Performance Test

Name……. ID……..

Date…….

Time started: _____ Time finished: _____

A. Instructions: perform the following activities within the given 5 hours of waste collection segregation and storage techniques with the given tools to perform this task.

I. Eye goggle
II. Respirator
III. Face shield
IV. Gown
V. Shoes
VI. Gloves
VII. waste pin
VIII. landfill/container

Task-4.1. Perform the waste collection, segregation and storage activities in veterinary clinic

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