Animal Health

Level-II

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Module Title: - Applaying Knowledge of Animal Welfare and Behaviours

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Ministry of Labor and Skills

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Introduction to the Module

This unit module covers the knowledge, skills and attitude required to explant the concept of animal behaviour and welfare; monitor and observe livestock welfare, implémente welfare procedures/practices, identify and report major animal welfare problèmes, identify animal behaviour in the context of an animal control and régulation environment during day-to-day activités, prépare, maintain and store Equipment used to humanely handle the animals.

LG #20	LO #1- Understand the concept of animal behaviour and welfare

Instruction sheet 1.

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

- The five animal freedom and animal welfare
- . Major animal welfare problems
- Identifying abnormal behaviours of animals
- Hazards when working with animals
- Animal welfare legislation, regulations and codes of practice

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:

- Define and state the five elements of animal freedom and animal welfare
- Identify major animal welfare problem in handling, transportation, harnessing, slaughtering, restraining and etc.
- Identify major Abnormal behaviors of animals
- Identify Risks or hazards when working with animals
- Animal welfare legislation, regulations and codes of practice are identified.

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

Information Sheet 1:

1.1. The five animal freedom and animal welfare

Introduction:

The term freedom refers to the characteristics of the animal, and carries an implication of moral obligations towards the animal. Equines, like other animals, have feelings; they have awareness of pleasure and joy, excitement and contentment as well as pain and suffering, depression and anxiety. Although originally devised to assess welfare in intensive farming systems, they can equally be applied to assess animal welfare in other situations, e.g. farming, working, companion, laboratory, entertainment, wild animals. The five freedoms are a useful 'check list', and enable us to identify situations which compromise good animal welfare that is, any situations which cause fear, pain, discomfort, injury, disease, or behavioral distress

- **Freedom from hunger & thirst**:

By ready access to fresh water and a diet to maintain full health and vigour. It is crucial that animals always have fresh water available, as well as a suitable diet that keeps them healthy and energetic. These diets should be specific to the animal, taking into consideration the age, gender, breeds and whether they have any specific health conditions.

- **Freedom from discomfort:**

By providing an appropriate environment including shelter and a comfortable resting area. All animals should be kept in a safe and healthy environment that has protection from the elements and a comfortable resting area. Soft bedding, access to natural light, an appropriate temperature and suitable noise levels should also be monitored and supplied. Care must be taken to ensure food and water bowls are properly maintained.

- **Freedom from fear and distress**:

By ensuring conditions and treatment which avoid mental suffering. Owners must ensure that the condition and treatment of their animals prevents any mental suffering. The fifth freedom states that the mental health of an animal is just as important as its physical health. Preventing overcrowding and providing a safe space for all animals are ways to ensure they feel protected.

- **Freedom from pain, injury and disease**:

By prevention or rapid diagnosis and treatment. Vaccinating animals to prevent disease and illness is a must, as is providing treatment and medication if needed. The constant monitoring of animals is also necessary to pick up on injury or illness quickly.

- **Freedom to express normal behaviour**:

By providing sufficient space, proper facilities and company of the animal's own kind. Normal behavior, like moving as freely as possible in sufficient space, being able to socialize with another animal and being kept in proper facilities, is the fourth freedom. Animals must be able to stretch every part of their body, run, jump and play. If they're happier with other animals around, they must also have the option to interact with them. Some animals want to avoid others, and this must be respected too

1.2. Major animal welfare problems

Introduction to Animal welfare

Ethiopia has the biggest populations of cattle, donkeys, horses, mules and poultry in Africa. It is estimated that we have more than 66 million cattle, more than 8 million donkeys and more than 60 million poultry. Although we have such huge population of different species of domestic animals, we are not benefiting from the livestock production sector that much. Some of the reasons behind are poor welfare statuses that are becoming major risk factors for several diseases. So improving the welfare of our animals is improving the economic benefits of the country. As a result better animal welfare is crucial for better human welfare

Animal welfare (or the welfare state of animal) can be defined as the physical, mental and natural states of an animal with regard to its attempt to cope with its environment and this can be assessed. Physical status (fitness) Can refer to the body condition, health, wounds, nutritional status of the, animal Mental status (feelings) Refers to the emotions and feelings of the animal, it can indicate happiness, sadness, sorrow, fear, pain, anxiety, distress and "Naturalness" (telos) refers to degree to which the animal is allowed to express its natural behaviours (It can indicate if the animal has access to spend time with its own kind and others, amount of space provided, whether the animal is allowed to mate and produce offspring. From a practical standpoint, the

clearest indication that a given behaviour is important is whether the animal shows a stress response or exhibits abnormal behaviour when prevented from performing it. A sow's prepartum nesting behaviour or the foraging behaviour of pigs are examples of such important behaviours. These three principles do not necessarily contradict one another; indeed, they are often complementary.

Animal welfare uses a multidimensional approach

All three of the aforementioned principles are included in multiple 'official' definitions of animal welfare. Thus, for example, the World organization for Animal Health considers an animal to be in a good state of welfare if it is healthy, comfortable, well-nourished and able to express innate behaviour and not suffering from pain, fear or duster. However, the term can mean different things to different people. These three welfare concepts can be translated into three broad definitions of welfare. Scientists working on animal welfare tend to reflect their own views on which aspect is important in their definition of welfare.

- **Physical status (fitness)**
  - ✓ "Welfare defines the state of an animal as regards its attempts to cope with its environment.
  - ✓ "I suggest that an animal is in a poor state of welfare only when physiological systems are disturbed to the point that survival or reproduction is impaired."
- **Mental status (feelings)**
  - ✓ .neither health nor lack of stress nor fitness is necessary and/or sufficient to conclude that an animal has good welfare. Welfare is dependent upon what animals feel
- **"Naturalness" (telos)**
  - ✓ Not only will welfare mean control of pain and suffering, it will also entail nurturing and fulfilment of the animals' nature, which I call telos)
  - ✓ Whatever definition is used there is an undeniable link between all three concepts. Any significant compromise in one aspect tends to affect the other two. It is therefore reasonable to take a holistic approach and consider all three elements.

Relationship between the three definitions (concepts)

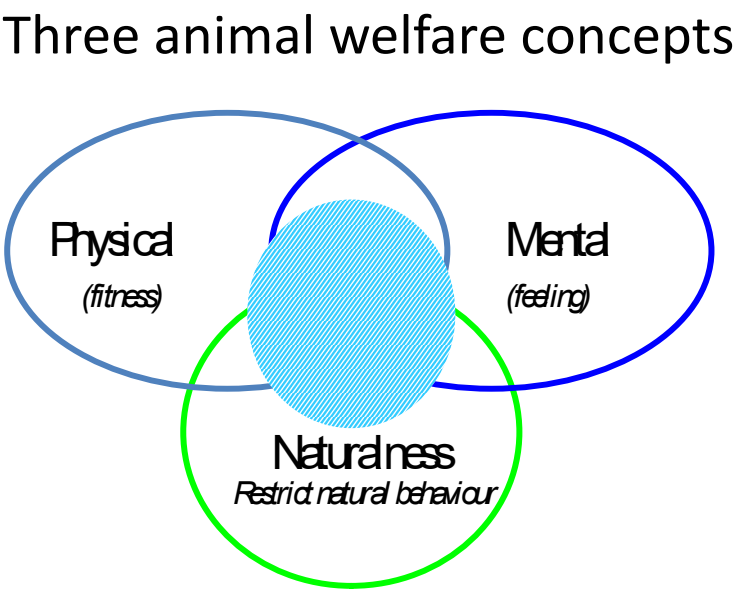


Diagram: 1.1. Any significant compromise in one aspect tends to affect the other two.

1.2.1. A common animal welfare problems

In Ethiopia, animal welfare problems mostly seen in marketing places, during transporting, farming places, abattoir (slaughtering) houses, feeding areas, sheltering areas and watering places. Ethiopia has several marketing systems existing for trading animals in different locations.

The most common problems suffered by draft animals are listed here. Over loading is a common problem, often as a result of ignorance. The weight which can be carried/pulled and the duration of work depend on many different factors, such as species, breed, and condition of animal, temperature and harness.

Inadequate equipment: if the equipment is badly designed, the animals have to use far more energy than necessary and are working inefficiently. If there is a bad fit between animal and equipment, chafing and sores will develop and the outcome is acute pain

Prolonged restraint can be stressful and has the potential to cause harm to the restrained animal under certain circumstances, it is critical that considerable care and training are employed. Prolonged restraint should be utilized only when other means are not feasible and only following a determination by the IACUC that the objectives justify the procedures. Convenience alone is not deemed sufficient justification for prolonged restraint.

The majority of livestock in developing countries are moved by trekking on the hoof, by road and rail. Historically, livestock has been moved on foot, but with increasing urbanization of the population and commercialization of animal production, livestock transport by road and rail vehicles has surpassed. Transport of livestock is undoubtedly the most stressful and injurious stage in the chain of operations between farm and slaughterhouse and contributes significantly to poor animal welfare and loss of production. Poor transportation can have serious deleterious effects on the welfare of livestock and can lead to significant loss of quality and production.

- **Effects of transport and movement include**:
  - ✓ **Stress** –meat spoilage and predispose animals to disease
  - ✓ **Bruising** –perhaps the most insidious and significant production waste in the meat industry
  - ✓ **Trampling** –this occurs when animals go down due to slippery floors or overcrowding
  - ✓ **Suffocation** -this usually follows on trampling;
  - ✓ **Heart failure** -occurs mostly in pigs when overfed prior to loading and transportation; f.
  - ✓ **Heat stroke** -pigs are susceptible to high environment temperatures and humidity;
  - ✓ **Sun burn** -exposure to sun affects pigs seriously;
  - ✓ **Bloat** -restraining ruminants or tying their feet without turning them will cause this;
  - ✓ **Poisoning** -animals can die from plant poisoning during trekking on hoof;
  - ✓ **Predation** -unguarded animals moving on the hoof may be attacked;
  - ✓ **Dehydration** -animals subject to long distance travel without proper watering will suffer weight loss and may die;
  - ✓ **Exhaustion** -may occur for many reasons including heavily pregnant animals or weaklings; m. Injuries -broken legs, horns
  - ✓ **Fighting** -this occurs mostly when a vehicle loaded with pig stops, or amongst horned and polled cattle

Transporting to markets mostly done in Ethiopia by trekking just like most African countries, due to lack of suitable vehicles, and there has been a research performed on how many animals die and injured during transport. It has been shown that, transport conditions, level of vibration on vehicle and the behaviors the animal expresses and changes of stress hormones, contradict animal welfare largely.

The common challenge in walking animals by foot often leads to accidents such as injured, dead or stolen of animal's cases. Likewise, lameness and injuries such as swelling of legs commonly occur. Similarly, the above has also been proven a problem when animals are also transported by vehicle indicating the problems which accompany a lack of rest, water and feed.

Mostly the **handling** of animals in developing countries has been an issue of subject for critical discussion since a long many times before and is in need of further research. Stakeholders in Ethiopia handle animals in a bad way, which increased the prevalence of death and injuries. By measuring behavioral or physiological conditions, animal handling can be explained to a higher extent and a welfare concept implemented in the particular area

For instance when adult male cattle are mixed in large or during transport, they express higher levels of fighting behavior which can be recorded and measured as a poor welfare indicator. Farm animals can remember the previous challenging situation during transport or handling by the stakeholders, where a larger hesitance reflected by the animals indicate, the greater the previous bad exposure that must have been experienced .

In this regard animal welfare situation in Ethiopia has multi directional problems that have not been dealt by the stakeholders and not covered even by the present non-governmental organizations working with this issue. In Ethiopia, farm animals such as:

- **Oxen** generally subjected to plough for long period without having rest and supplied adequate feed and water.

- **Pack animals** such as horses and donkey are forced to carry overload weight for long distances without proper harnessing materials and inadequate feed and water provisions, despite their contributions is high in the daily activity of the owner directly or indirectly.

- **Pet animals** such as dogs will be **killed** by poison inhumanly yearly for the sake of rabies control and prevention in most areas of the country. Sick animals will not be taken to clinics for treatment. The farm animals in most parts of the country are openly housed without appropriate shelter and are exposed for intensive direct sunlight and erratic summer rainfall.

- Animals will be forced to stay for long time in the market even for days without water and feed in harsh handling manner. However, a number of Veterinary schools and Animal science fields of study departments are graduating professionals yet the services in health care and keeping the welfare of animals is lagging behind the expectation

1.3. Identifying abnormal behaviors of animals

Behavior: is anything an animal does involving action and/or a response to a stimulus. Blinking, eating, walking, flying, vocalizing and huddling are all examples of behaviors. Livestock behave in various ways, depending on circumstances and, to a large extent, species. A basic understanding of animal behaviour in typical circumstances from the farm to the market or slaughterhouse will assist handlers in the management of livestock and thereby prevent undue stress and injury. For example, animals, which are unaccustomed to frequent contact with humans, such as ranched or extensively raised stock, will not allow people to approach or touch them easily.

These animals will require more elaborate loading ramps, pens and handling races than tame ones. People loading extensively raised animals need to understand the psychology of the animal in order to prevent injury to either the animal or themselves. On the other hand, oxen, draught animals, those animals raised intensively or dipped regularly (for tick control) and animals living in close contact with humans, such as in rural areas, are generally more tame and easy to handle

1.3.1. Determine behavior of animals

A. Normal behavior

Normal behavior is the way an animal's acts in its natural environment. Enough space, proper shelter and housing, as well as company of the animals own kind, allows and encourages the expression of normal behaviors. It is also that expected of physically and psychologically health animals. Changes in behavior and the presence/absence of particular behaviors can provide a valuable indication of the animal's welfare. Conflict is a natural or normal part of the behavior of many social animals.

Primates should be housed in stable groups of suitable size and composition to allow the full expression of these behaviors. Self-grooming is a normal behaviour, but over-grooming (which has been linked to tension and anxiety) can result in hair loss and skin sores. Primates should display self-grooming, feeding and drinking behaviours relevant to the species concerned. Primates should display physical activities relevant to the species concerned.
These include:

- Walking, running, climbing, turning, reaching, stretching, bending, pushing, pulling, swinging, jumping. It is important that animals are given the opportunity to be able to express their natural behaviors. If an animal is not able to express their natural behaviors, they may suffer emotionally and physically.

- For instance, dust bathing is a natural behavior performed by chickens several times per day. It occurs when a chicken finds a dirt patch and digs themselves into it, covering their entire bodies with dirt. Similarly, chattering, the act of making a chirping sound at birds is a completely normal behavior in cat but it would be considered an odd behavior if a horse was found chattering at birds!

B. Abnormal behaviors

Abnormal behavior in animals- can be defined in several ways. Statistically, abnormal is when the occurrence, frequency or intensity of behaviour varies statistically significantly, either more or less, from the normal value. Less formally, 'abnormal' includes any activity judged to

be outside the normal behaviour pattern for animals of that particular class or age. For example, infanticide may be a normal behaviour and regularly observed in one species, however, in another species it might be normal but becomes 'abnormal' if it reaches a high frequency.

- **Factors Affecting the Behaviours of Animals**

Today, we easily recognize that both genes and the environment influence behaviour, and scientists studying behaviour focus on the interaction between these two factors. Genes, via their influences on morphology and physiology, create a framework within which the environment acts to shape the behaviour of an individual animal.

I. **The environmental (external)factors**

It can affect morphological and physiological development; in turn behaviour develops as a result of that animal's shape and internal workings

One of the most important elements provided by the environment is mental stimulation. Without this stimulation, problem behaviors develop; these behaviors are often designed to relieve the boredom of domestication.

Insufficient space increases the competition with herd mates for food and personal space; this in turn increases stress which can affect the temperament of the animals. When interacting with a animals, owners and handlers become part of the environment; therefore, changes in the behaviour of people can change the behaviour of animals. Any stress that is caused by the environment will be reflected in the animal behaviour.

Here are 5 important behaviors that are affected by environment:

a. **Fear Response**: One of the most obvious ways that environment affects animal behavior is by their level of interaction with humans. Some animals really thrive in city environments. Yet this is also a situation that sometimes dramatically changes the normal fear response that wild animals have towards people

b. **Territory Size:** because different environments have different availability of food resources, sometimes animals require larger or smaller territories in order to successfully meet all their needs. For example In places with high food density like a city, or a grassy vole paradise you might find that territory size can be a lot smaller,

with much larger & more robust populations. Animals are always trying to conserve energy. They never want to work harder than is absolutely necessary to ensure their survival. So let's get inside the mind of an animal and think about what they need in order to survive…

- Food (and sometimes water).
- Nesting/Shelter site, opportunities to burrow, etc.
- Safety/Protection from predators or danger.
- Someone to mate with.

c. **Diet**: Diet can sometimes change quite dramatically depending on the environment you're in. You'll notice the most adaptable species tend to be omnivores because they have more options about what to eat. This includes animals like canines,

d. **Daily Habits:** It's important to remember that animals are a lot like people. They have daily habits and routines that change depending on what makes the most sense for their environment

e. **Effect of Predators on Daily Habits:** Another big driver of these daily habits is whether or not an animal is being hunted.

f. **Family & Herd Size:** Different environments can even affect herd behavior by changing the size of their groups.

g. **Pain:** Pain is one of the most common causes of behaviour problems in animals. If the animas is in pain, it will do all it can to relieve this pain. Arthritis, back problems and other injuries can lead to kicking and refusal to have the feet lifted. If lifting the foot is painful, kicking is an attempt to have the foot placed back on the floor, therefore relieving the pain. Pain should always be considered if a animals is displaying difficult or abnormal behaviour, and especially in cases of sudden changes of behaviour or if the behaviour is out of character with the animals normal temperament, such as where a normally placid animals becomes aggressive, In all cases of behavioral problems it is

advisable to consult your veterinary surgeon first to eliminate pain as a possible cause of behaviour change.

h. **Medical Conditions:** There are numerous medical conditions that may lead to changes in behaviour or the development of problem behaviours; these include cystic ovaries, hormonal conditions, mineral and vitamin deficiencies, brain tumors, blindness, hearing loss, skin conditions, photo sensitivity and food intolerances, to name but a few. Often, these conditions are extremely difficult to identify and a vet should always be consulted to ensure an accurate diagnosis and treatment programmers.

i. **Previous Experience/Learning:** Learning starts from the moment a animals is born and continues throughout its life. Learning can be described as the gaining of knowledge that leads to changes in behaviour. Whether a one spp of animals has been socialized with other spp and allowed to develop correctly through the phases of juvenile development will determine whether the animals has behavioral problems as a mature animal. Situations that induce pain or fear will quickly teach the animal to fear people involved with such experiences.

j. **Human Interaction:** A animals behaviour will be influenced by the ability, experience and confidence of its handler. A nervous handler will increase the nervousness of the animals. When a donkey is labeled as "difficult, naughty or bad", the behaviour of the handler changes in accordance with the label and the animal's behaviour will reflect how it has been labeled. Examples, Donkeys are large, strong animals and it is normal for inexperienced handlers to lack confidence or even be fearful. Anyone intending to handle a donkey should gain as much knowledge and experience as possible, prior to commencing any behaviour training.

II. Internal factor (The condition of animal itself)

a. Evolution

For 60 million years horses and donkeys have been flight animals, surviving by running away from predators. If a donkey is restricted in its ability to move away from fearful experiences, they use the fight response to save themselves. In the wild, donkeys are more territorial than horses. Therefore, our domesticated donkeys can also be territorial. This may lead them to

become aggressive towards small animals such as sheep, cats, chickens and dogs when defending their territory.

b. Genetics

Animals inherit their parents' genes and perhaps the behavioural characteristics that go with these genes. It is difficult to know whether behaviours are passed on in the genes or if certain behaviour is learnt from parents during the juvenile stage. The behavioural traits of the parents cause their offspring to behave in a similar way. genes also create the scaffold for learning, memory, and cognition, remarkable mechanisms that allow animals to acquire and store information about their environment for use in shaping their beheviour

1.3.2.Signs of abnormal behavior of animal.

However, the ubiquity of pathogenic microbes (protozoa, bacteria, viruses, fungi, parasites) and other external parasites in a production environment of farm animals ultimately prone the animals to infections or infestation of pests and diseases which on gestation may turn out to be chronic or deadly Before an infectious disease in farm animals begin to manifest its symptoms or get to the threshold of economic losses, the infected or physiologically disturbed animals ordinarily communicate their health status for the attention of their keepers.

By nature, animals ordinarily communicate with conspecifics or fellow animals in four basic ways, namely pheromones, auditory, visual and tactile cues. they however indirectly communicate their social and health statuses to their keepers particularly using the auditory and visual cues. This is based on the fact that both animals and man could make and receive sounds, which are an essential stimulus to effecting responses between the two Animal. In this wise, farm animals use their vocal sounds to express their health or social conditions to the farmers. For instance, a distressed animal makes distressing vocalization as a way to call its owner for needed attention. Empirical studies on emotional vocalizations of farm animals revealed that environmental stimulus and/or hormone concentrations affecting the mood, thirst, and hunger, and appetitive behaviour of an animal stimulate specific behaviours that may be accompanied vocalization in the animals Thus, a dam in parturition distress might make a very high pitch sound to attract an attendant to give needed help for safe delivery; or where its kid is hooked and needed help to have it rescued. In the same vein, ewes or nannies on heat give constant high

pitch sound as a way to indicate readiness for a reception which a breeder needs to take advantage of either by the introduction of ram/Billy or artificial insemination. Pig is known for screaming when put under stress, particularly when being forcefully pulled in an attempt to move it from one place to the other. This cry may constitute a security call to the owner when the animal is to be forcefully taken out of the herds by an intruder.

The visual cues, on the other hand, are displayed actions that could be visually perceived by the farmers in their animals. Farm animals thus express their social and health situations by visual communication signals which a farm attendant needs to understand for an appropriate response. For instance, healthy farm animals are ordinarily active and ever ready to feed, and will be on the rise when they are approached. Where a farm animal sluggishly or refuses to move, or is reluctant to get up when approached (Figure 1) suggests that something is wrong with the animal and as such will need to be attended to for detection a laden health issue. Although, varying diseases have different physiological effects on specific farm animals, infected animals react on whatever kind of disease that might impair their physiological status by the display of signals that serve as health communication. Common communicative signals by a disease-laden animal could thus take the following forms:



Figure 1.Healthy lambs on their feet with the physiological lamb sitting isolated and unable to move. Source: Photo by author.

Poor appearance of animals: ordinarily, a healthy animal will generally have a good look with a characteristic good body structure and posture. Related body indicators of animals with good health include robust outlook and/or roundness of the stomach, smooth and well-laid hair or

wool with uniform coverage over the body, bright eyes, and dry nose and mouth. On the other hand, a sick animal will put up a poor appearance that may be characterized by leanness, caved-in stomach, falling air or wool, nasal discharge, dripping salivation and/or continuous coughing. The caved-in stomach may have to do with poor feeding or poor feed conversion efficiency by the animal, while the falling hair or wool may be due to ectoparasite infestation of the animal. For instance, piglets severely affected by *coccidian* produce a rough-haired coat, become dehydrated and remain continually dirtied with faeces. In the case of poultry, appearance of a bird with ruffled feathers instead of smooth and glossy ones or the wattle looks dull with lesions instead of being bright suggests impairment of the bird's physiological functions and as such will need veterinary care. A common disease of poultry with these characteristic features is the blackhead disease.

a. Inactive socialization

A healthy animal is socially active and ever alert to its environment by having its head raised in an attempt to keep watch of its surroundings, and usually in close groups with one another. In ruminants, the animals are constantly chewing due to regurgitation of consumed pasture. *Babesiosis* disease, which is common to cattle, is known to cause cessation of rumination or constipation in the animal. Poultry birds in cages, deep litters, and free-range will equally have their heads up clucking or gobbling (respectively to chicken and turkeys) which increases on sighting someone or something strange in their environment. Where an animal is in isolation of the other animals or has its head lowered or drooped down and becomes dulled, unable to stand up or move sluggishly when being approached imply that the animal is physiologically disturbed and as such will need an examination to detect what is wrong with it.

b. Wobbled movement or gait

Whenever there is a need for farm animals to move, they will move steadily and easily; and where there is the need to flee from threats in their environment, they move very fast and run. Where an animal moves sluggishly or could not move would imply ill health. Abnormal gait can include unusual walking patterns or uneven weight-bearing, as seen when a cow is suffering from lameness. Lameness may be an indication of rot in the foot characterized by swelling and moistened skin between the claws and foul-smelling discharge. Consequently, the animal remains lying down for long periods and may not bear weight on the affected leg, and where

both front legs are affected, sheep, for example, walk on their knees and severe cases and chronic infection leads to grossly misshapen and overgrown hooves. In the same vein is an abnormal stance indicating pain and this may be reflected as tucked abdomen and tail, hunched back or standing still for extended periods

c. Drop or refusal of food consumption

Animals are ever ready to feed when nothing is wrong with them and as such a drop in the rate of feed consumption or outright refusal of feed by an animal or non-excitation at being fed would imply that something is wrong with the animal. Most diseases though cause an animal to refuse feed, nutritional factors equally accounted for feed refusal. For instance, diseases such as bloating, grass tetany, ketosis, hypocalcaemia, and mineral deficiencies are caused by nutrient deficiencies, excesses or imbalances, or by metabolic disturbances. As a result of poor feeding or feed conversion efficiency, the animals lose weight with characteristic caved-in stomach and general weakness.

d. Abnormal droppings/dung's

Excreta of farm animals should be firm or looks 'bolus' and black or darkish green, particularly in cattle and pigs, and like small balls in sheep and goats. Droppings in poultry are usually grayish with urinary liquid. Where the dung of an animal looks watery, and sometimes have the faces stained with blood would imply that something is wrong with the animal. Such signs usually have to with diarrhea or other gastrointestinal diseases. *Coccidian* in piglets, for instance, is characterized by diarrhea and scour in early stage, and late-stage, faces become yellow or creamy-grey diarrhea causing loss of condition and reduced growth rates at age 7–10 days Mortality rates may reach 20% Concurrent infections with other bacteria, viruses or parasites can increase mortality further.

e. Abortion in animals

One of the production goals in livestock management is a production of litters either for multiplication of animal population or marketing for income generation. A farmer could readily achieve this with healthy animals but where a pregnant animal is infected with the abortion-related disease the resultant effect is loss of fetus. Diseases such as leptospirosis, vibriosis, pestivirus, and trichomoniasis cause abortion which may be early-term abortion or embryonic

loss in ruminant farm animals Also, there may be stillbirth, weak, stunted or deformed calves, and low calving and lambing rate. Observation of these traits in the animals calls for veterinary care of the animal(s).

f. Drop-in productivity

A careful look at production records of the animals could help determine the health status of the animals. An animal that has been prolific in production certainly loses production potential when its normal healthy condition is hindered by a disease or pest infestation. In a lactating dam with impaired physiological functions, there may be a drop in the quantity of produced per day or drop in egg production by sick birds. Dressing of diseased animals also produces poor quality meat that is unfit for consumption thereby leading to loss of revenue or profitable income to the farmer.

g. Sudden death of animal(s)

The end of physiologically disturbed animal(s) is death, especially where the signs of ill health are not quickly detected for prompt veterinary action. In some cases, however, death may be sudden without a physical sign of ill health. Several diseases are so virulent that it leads to the death of farm animals within a short time. For instance, anthrax could cause sudden death within 2–3 days in ruminant and pigs. In the vein, PPR (Peste des petits ruminants) in small ruminants is associated with high morbidity and mortality.

1.4. Hazards when working with animals

Occupational Health and Safety (OHS) hazards exist in every workplace in many different forms sharp edges, falling objects, flying sparks, chemicals, noise and a myriad of other potentially dangerous situations.

Definition of terms

- **Risk**: Risk is the significance of the hazard in terms of likelihood and severity of any possible injury. ***Include any occurrence which results in personal injury, disease or death, or property damage*** It is a measure of the likelihood of a consequence from working with a certain hazard

- **A hazard**: A hazard is anything that has the potential to harm the health or safety of a person and/or an animal. It is the inherent danger involved in working with a particular animal, material, equipment, process, procedure or system
- **Hazardous Substances:** Any substance that has the potential to harm the health of persons in the workplace and includes chemicals scheduled under the Poisons Act, chemicals classified under the Dangerous Goods or Hazardous Wastes.
- **Hazards involved in working with animals and animal projects:** include things like allergies, bites, zoonotic diseases, working with hazardous chemicals or radiation, and handling contaminated waste. Information follows in this document that describes many of the potential hazards individually.
- **Risks involved in working with animals:** range from a low to high potential of injury or illness from the identified hazards.

Note-The primary way to avoid problems in work with animals is to know what the hazards are and what precautions to take in order to avoid them.

1.4.1. Types of risks and hazards related on working with animals.

- **Physical Hazards-** Bites, sprains, scratches, sharps, lasers, machinery, slips, falls
- **Chemical Hazards-** Burns, skin irritations, inhalation, ingestion
- **Allergens-**Allergies to rodents, cats, dogs (urine, contaminated litter, dander, hair)
- **Ergonomics-** Heavy lifting, repetitive motion, body mechanics, posture
- **Infectious Agents:** (Bacteria, fungi, parasites, protozoa, rickettsia, viruses, blood borne pathogens)
- **Zoonosis-:** Human diseases acquired from animals or vise versa. When working with each type of infected animal and then take precautions to minimize the risk of infection. Zoonosis can be acquired through various routes of infection, including contact with animal products, the animal itself, or a byproduct of the animal. The routes of infection include ingestion, inhalation, and penetration of broken or unbroken skin, wound penetration, and contact with the mucous membranes of the eyes, nose, and mouth via the following:
  - ✓ Animal bites and scratches;
  - ✓ Contact with animal tissues and cultures, body fluids, and excreta;

- ✓ Inanimate objects that are contaminated by the animal or animal contact; and
- ✓ Exposure to aerosols produced as a result of activities such as cleaning cages.

Individuals whose work involves substantial exposure to or handling of animals and animal tissues, body fluids, and cell cultures should be aware of the possibility of the illnesses that may be transmitted by contact with animals. In the zoonosis training module, at-risk individuals are informed of laboratory-acquired zoonosis, causative microorganisms, animals most commonly in contact with humans, appropriate animal handling procedures, personal hygiene, and protective equipment specific to the animal type and use**.**

1.4.2. Risk assessment

Risk assessment means the evaluation of the likelihood and the biological and economic consequences of entry, establishment and spread of a hazard

Risk assessments analyses may help in judging health hazards from the livestock industry and their consequences in an objective and measurable way. Risk assessment may thus be instrumental in pointing the way where to intervene, in allocating funds for control activities, as well as in identifying knowledge gaps to which research activities should be directed. Evidently people tend to be risk adverse with the ultimate aim to avoid harm, and they appear to do so more and more often. The process of a risk assessment comprises of several steps,

The usefulness of risk assessments therefore stands or falls with the correct identification of a hazard, its parameters and collected data, the model build to include the parameters, and the interpretation of the outcomes of the risk assessment. Thus the biggest uncertainty in risk analysis is whether we started off analyzing the right thing and in the right way. The final stage, risk communication, is perhaps the most underestimated aspect of a risk assessment. The results need to be presented in an easy understandable way, particularly for those responsible for the implementation of control measures. The risk assessment approach basically consists of four successive steps:

- **Hazard characterization:** identifying and characterizing the hazard, including the specifics of its life c
- **entry assessment :** (how can the hazard come into contact with an animal or a human, how many different entry pathways exist, and which are the most likely to occur?),
- **Exposure assessment:** (how frequent and in what quantities does exposure occur?), and a
- **Consequence assessment:** (what is the impact of exposure?).

NB. . Evidently, risk assessments cannot identify hazards for us, or predict the emergence of yet unidentified hazards. e.g. a reduction in Salmonella growth of x-% on chicken breasts during packaging. Neither can risk assessments reduce the variability surrounding a hazard identified. Nature, and all living things, is unpredictable, and no matter how much data were collected and used for the risk assessment, at some point we will always be left with variability in the outcome

Table 1
Examples in which risk-analysis has contributed to the protection of animal and human health.

Hazard identified	Potential consequences	Risk assessment	Measures taken
Q-fever	Serious illness in humans	Medium risk	Vaccination, testing and culling of affected animals
Antibiotic (multi-) resistance	Emergence of untreatable illnesses	High risk	Antibiotic reduction strategy
Bacterial foodborne diseases (salmonellosis, campylobacteriosis, listeriosis)	Mild to serious illness in humans	Variable risk	Various control strategies
Products from vaccinated animals, vaccinated against a former OIE list A disease, for example classical swine fever	Spread of disease due to trade in animals with subclinical wild virus infections	Negligible risk	Discussion on implementing emergency vaccination instead of culling
Rift Valley fever, a mosquito borne zoonosis.	Serious illness in farm animals and humans	Low risk (for the Netherlands)	Mosquito surveillance in the Netherlands, control of identified imported exotic mosquitos
Crimean Congo haemorrhagic fever, a tick borne zoonosis	Serious illness in humans	Low risk (for the Netherlands)	Tick surveillance in the Netherlands
Malaria	Serious illness in humans	High risk through international air-travel	Fumigation of aircrafts, uptake of prophylactic medication by travellers

1.4.3. Management of hazards

- Allow only experienced and trained staff to handle or restrain animals
- Instruct staff in safe animal handling, including recognizing ‘warning’ signs. In many mammalian species the "warning" postures includes
  - ✓ lowered head, ears down or back, and
  - ✓ In the smaller animals, mouth opens in a snarl.

- Label cages where an animal's behaviour gives reason for concern
- Provide personal protective clothing
- Students must not handle animals unless the animal and the task have been assessed by their supervisor
- Don't approach any animal unless assured by your supervisor that it's safe
- Follow strict handling, labeling and storage procedures for all hazardous substances
- Provide protective clothing (such as gloves) for staff
- Students must not medicate animals or handle any drugs used in animal treatment
- Wear rubber gloves when using cleaning chemicals

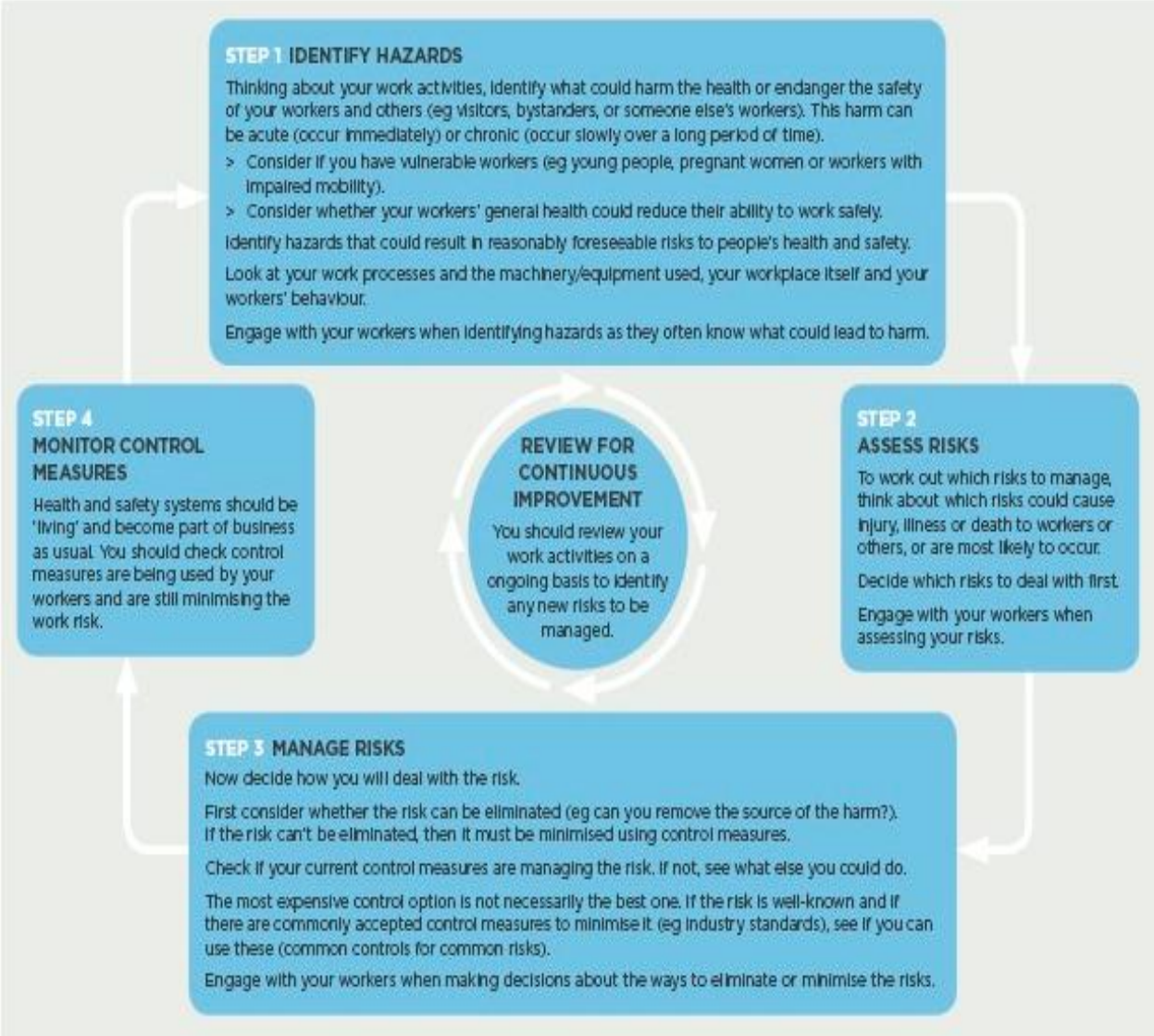


Diagram 1:2. Show Risk and Hazard Management

1.5. Animal welfare legislation, regulations and codes of practice

Defining terminology

Legislation: refers to the preparation and enactment of laws by a legislative body through its lawmaking process. The legislative process includes evaluating, amending, and voting on proposed laws and is concerned with the words used in the bill to communicate the values, judgments, and purposes of the proposal. An idea becomes an item of legislative business when it is written as a bill. A bill is a draft, or tentative version, of what might become part of the written law. A bill that is enacted is called an act or statute.

Regulation: a rule or order issued by an executive authority or regulatory agency of a government and having the force of law

A code of practice is a written guideline issued by a professional association that lays out ethical standards for a profession, trade, occupation, organization, or union. Often, they consist of rules crafted in response to actual or potential dangers observed on the job. The Occupational Safety and Health Administration (OSHA), for example, issues codes of practice for various industries in order to encourage safer working conditions.

1.5.1. Animal welfare legislation

Animal welfare science identifies a number of common areas of synergy between animal welfare, animal health and productivity. Regardless of the ethical concerns, many countries may choose to enact and enforce animal welfare legislation in the interest of increasing production and trade in animal-based foods for both international and domestic markets. Although animal welfare is increasingly the subject of more comprehensive regulation around the world, it remains a work in progress. Most detailed legislation has been passed by European countries and countries aiming to increase international trade in animal food products, while many other countries have left the subject unregulated or regulated only in the most minimal way. The decision to regulate animal welfare must be balanced 84 Legislative and regulatory options for animal against other government policies and with a realistic perspective of local capacities and abilities to comply with legislative requirements. Depending on the national context, the essential elements of animal welfare legislation outlined in this text may well need to be modified,

implemented incrementally or supplemented with economic incentives or voluntary schemes. The answer for each country will depend on local politics, priorities and resources, and legislation should be developed with these clearly in view.

In the development of legislation on animal welfare, many national governments and international organizations rely on multi-disciplinary animal welfare science in addition to broad animal welfare principles such as those just reviewed.

In Europe, animal welfare has been the subject of national legislation and regional agreements for more than a generation, largely due to more exposure to and discomfort with the treatment of animals in industrialized farms and slaughter houses. In light of increased international trade, globalization of animal health concerns and pressure for harmonization of food safety standards, many other countries are also choosing to regulate animal welfare.

To improve their legislative frameworks, some countries use or adapt pre-existing legislation on the prevention of cruelty to animals, while others draft new animal welfare laws, blending national and local concerns with international animal welfare principles. Because the earliest animal welfare legislation was developed in countries where industrialized production is the norm, these legislative instruments tend to focus on farm animals housed, transported and slaughtered in high-technology environments designed to intensify production.

However, animal welfare legislation need not be limited to industrialized production. Well-drafted legislation can and should apply to other types of production such as subsistence farming and small-scale commercial production. Different scales of production raise different concerns.

1.5.2. Animal welfare regulations

As any African countries, Ethiopia has not formulated regular ways of awareness creation to the public and is not aware of what the minimal animal welfare standards to be esteemed. There are few attempts made by few non-governmental organizations such as The Donkey Sanctuary Project, Homeless Animals Protection Society introduction of Animal welfare to the curriculum of animal science and veterinary medicine fields of study from the government side.

It is true most proportions of Africans Livestock owners do not realize as animals are sensitive to beatings and mistreatment. In addition, many of them make branding or knives in order to identify their animals on prominent parts of the animal body.

Ethiopia as a country participated in development of animal welfare strategy and guidelines in IGAD wide conferences. The IGAD conference dealt issues like developing relevant policy, national legislations and clear strategies on animal welfare matters, adoption of the existing international animal welfare standards in a science based animal welfare standards and guidelines.

Ethiopia also move a good step in integrating the animal welfare issues in the educational system(curriculum) in particular in at the university level, specifically in veterinary and animal science fields of study. Ethiopia support and facilitate the exercise of animal welfare, it has the legal frame in encouraging active participation of animal science professionals in the activities of animal welfare institutions through membership and active participation by offering advice, professional services, to these organizations and/or their representatives.

In Ethiopian, various proclamations tried to show as it condemn aversive actions done on animals. For instance, crime proclamation No.414/2004 of Ethiopia stated that contamination of water, feed and pasture counted as a crime. Crimes committed through production and distribution of substances hazardous to animal health, manufacture, adulteration and sale of fodder and products injurious to livestock and scandalous treatment of animals are included indicating animal welfare issues lightly in different articles on the Criminal Code of the Federal Democratic Republic of Ethiopia. Federal Negarit Gazeta of Ethiopia under the Proclamation No.267/2002 stated about the prevention and control of animal diseases.

In this proclamation, the primary concern is to prevent and control animal diseases in order to maximize the benefits obtained from the extensive livestock resource by keeping the wellbeing or welfare of animals. Whereas the Civil Society Organization stated as the ethiopian government promotes nongovernmental societies to organize and work on animal welfare issues in the state.

Ethiopian Veterinary Drug and Feed Administration and Control Proclamation No. 728/2011 also stated as clinical test shall be conducted with due care to animal welfare requirements.

1.5.3. Codes of Animal welfare practice

The original goal of the world organization for animal health (OIE) was to work towards international cooperation and the creation of a communication network among countries in case of an animal disease outbreak; today, the organization also provides sanitary and scientific information and develops guidance on various aspects of animal health. OIE's codes, guidelines and science-based standards are intended to be used by the veterinary authorities of member states.

The OIE has devised a variety of guidelines to address the treatment of animals used for scientific research or kept for companionship, and has elaborated health standards for intensive farming. These standards are found in the OIE Terrestrial Animal Health Code (the Code).The Code aims to ensure the health of terrestrial animals and the safety of animal products in international trade. It establishes detailed measures to be implemented by the veterinary authorities of both importing and exporting countries to prevent the transfer of pathogens without creating unjustified barriers to trade.

Accordingly the Code regulates import and export procedures and specifies the diagnostic tests to be applied before export. Since 2005, the Code also addresses some animal welfare issues, particularly those arising

- During the transport of animals by land, sea or air;
- The slaughter of animals for human consumption; and
- The killing of animals for purposes of disease control.

The incorporation of animal welfare standards into the Code is the result of the OIE's having identified animal welfare as a priority in its 2001-2005 Strategic Plan.

In 2002, the OIE created a permanent Working Group on Animal Welfare, whose first task was to develop a set of guiding principles to serve as the philosophical foundations of all OIE work on animal welfare.

These principles were adopted by the International Committee of OIE member countries during the 72nd General Session in May 2004 and are now included in the Code as follows**:**

- There is a critical relationship between animal health and animal welfare.
- The internationally recognized "Five Freedoms" (see Chapter I, Section 1.3) provide valuable guidance in animal welfare.
- The internationally recognized "three Rs" (reduction in number of animals, refinement of experimental methods and replacement of animals with non-animal techniques) provide valuable guidance for the use of animals in science.
- The scientific assessment of animal welfare involves diverse elements which need to be considered together, and selecting and weighing these elements often involves value-based assumptions which should be made as explicit as possible.
- The use of animals in agriculture and science and for companionship, recreation and entertainment makes a major contribution to the well-being of people.
- The use of animals carries with it an ethical responsibility to ensure the welfare of such animals to the greatest extent practicable.
- Improvements in farm animal welfare can often improve productivity and food safety and hence lead to economic benefits.
- Equivalent outcomes based on performance criteria, rather than identical systems based on design criteria, should be the basis for comparison of animal welfare standards and recommendations.

Self-check 1	

Name…… ID…… Date…….

Directions: Answer all the questions listed below.

Test I: Choose the best answer (each has 1 point)

1. Which one is an examples of freedom from discomfort

   A, Un thirsty B, Non hunger C, Good shelter D, Free of injury

2. Which on is not an indicators of animal welfare?

   A, Fitness B, Feeling C. Pain D. Nothing

3. Among the following which is **NOT an area for animal welfare assessment**?

   A, Farm B, Veterinary clinic C, Abattoir D, Every where

4. Which one a sign of abnormal behaviour? :

   A, Walking B, Stretching

   C, Feeding D, Depression

5. Which one is not a biological hazard?

   A, Bacteria B Virus C Fungs D, Heavy metal.

Test II: Short Answer Questions (each has 3 point)

1. List the five animal freedom
2. Define what is animal welfare
3. Write the definition of hazard and risk
4. List factors affecting behaviors.
5. What are constructive solutions required to solve animal behaviour related risks and hazards?(5 points)
6. What is OHS
7. List the type of work place hazard

Note: **Satisfactory rating - 13 points** **Unsatisfactory - below 13 points**

LG #21	LO #2- Monitor and assess welfare of animal

Instruction sheet 2

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

- . Livestock welfare assessment
- Recognize and report welfare problems
- Safe handling of livestock
- Humanely handling of sick animals
- Assessing environmental implications on livestock husbandry practices
- Constructive solutions in case of animal welfare violation

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:

- Assess and check regularly welfare of livestock according to the requirements of the organization.
- Recognize and report animal welfare problems
- Handle livestock peacefully according to enterprise procedures
- Maintain personal hygiene practice through all activity associated with livestock handling; include reducing risk of disease transmission to human.
- Treat safely and destroy humanly sick or dead livestock, if necessary.
- Identify and assess, environmental implication associated with livestock husbandry practices, whether animal welfare are violated or not.
- recommended constructive solution in cases when animal welfare are found disrupted

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. Livestock welfare assessment

There is no established method for assessing animal welfare, but various frameworks have been suggested. Their application requires knowledge of animal health and production and species-typical behavior. Research is being done to develop practical methods of assessing welfare. Generally three approaches are followed in assessing animal welfare: (1) naturalistic, (2) functional and (3) subjective experience.

In order to assess animal welfare we must first understand what animal welfare means. In the past, animal welfare assessments have often focused on the health of the animal and other physical measures. They are easiest to quantify as are usually observable measures such as body condition. But now there is an increasing emphasis that assessments should be considering the affective states (emotions and feelings) of an animal when measuring their welfare.

Animal welfare encompasses both the affective (emotional) and physical state of an animal. However, often only prescribed (numerical) measures such as the size of an enclosure, the depth of a pool, the nutritional content of food and the healthcare provided, are often used to assess the welfare of the animal. When assessing any welfare problem, it is necessary to consider the extent of poor welfare, the intensity of suffering and its duration. Welfare assessment concerns individual animals; however, where there are indications of poor welfare, we consider that the more animals that are affected, the more serious is the problem. The scientific assessment of animal welfare involves multiple criteria which can be applied at three different levels:

a. **“Animal-based”** criteria are assessed at the level of the animals themselves. These include the presence of injuries, the incidence of disease, scoring of body condition, and the performance of certain behavior. Animal-based criteria in animal transportation, for example, might include the rate of survival and the incidence of bruising and injury.
b. **“Resource-based”** criteria assess housing, diet and other resources that are provided for the animals.

c. **"Management-based"** criteria focus on human care as an important factor in animal welfare. They may include the handling skills of the staff, feeding practices, hygiene strategies, and record keeping

2.1.1. Assessing Animal Welfare using the 'Five Animal Freedoms'

To make clear how the five animal freedoms used to assess the animal welfare, let us use participants on a certain meeting what they feel during that time. Simple question to ask is "How are you feeling at the moment?" They often respond with a single phrase or concept one of the listed grades n the figure below.

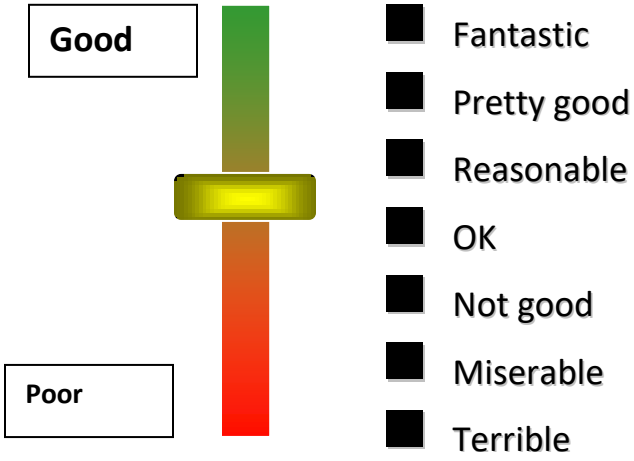


Diagram: 2.1. Assessment of welfare on feeling

If you ask for further details, and try to determine the cause behind the individual's current state of mind, you will usually get a reply that incorporates different feelings about various aspects of the person's life. For example, an individual may feel that work is good but his/her personal life is only reasonable, etc.

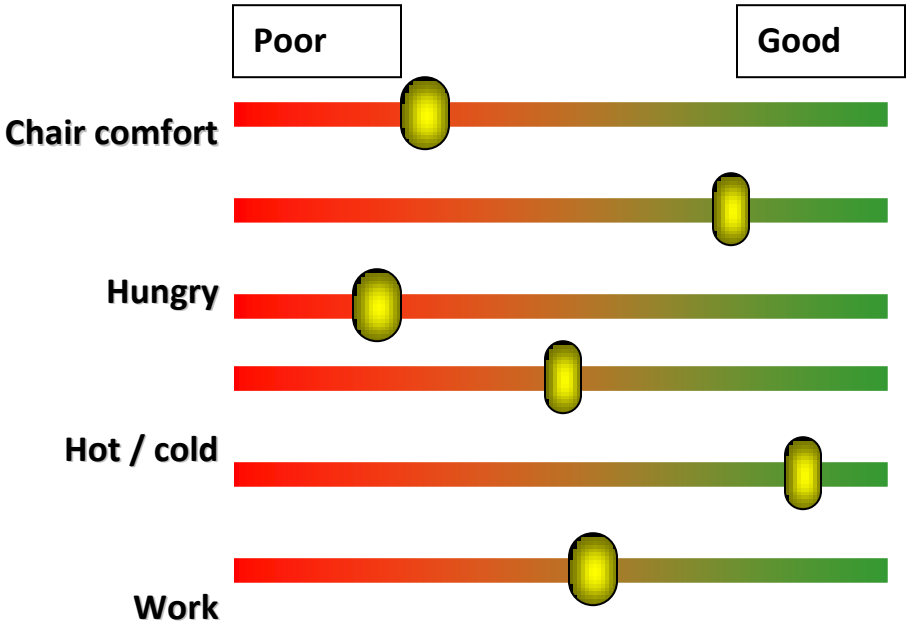


Diagram 2.2: Assessment of welfare in human

Animal welfare is also affected by many components and we need to ask what these different aspects are. The Five Freedoms provide a convenient list of aspects that are considered to be important for all animals. The diagram below shows different freedoms across a scale from poor to good. The 'poor' side of the spectrum signifies that the particular need has not been met on moving towards the 'good' end, we can show that the need (or freedom) has been fulfilled. An animal may have different levels of each of the five freedoms some of the aspects may be good, while others may be poor.

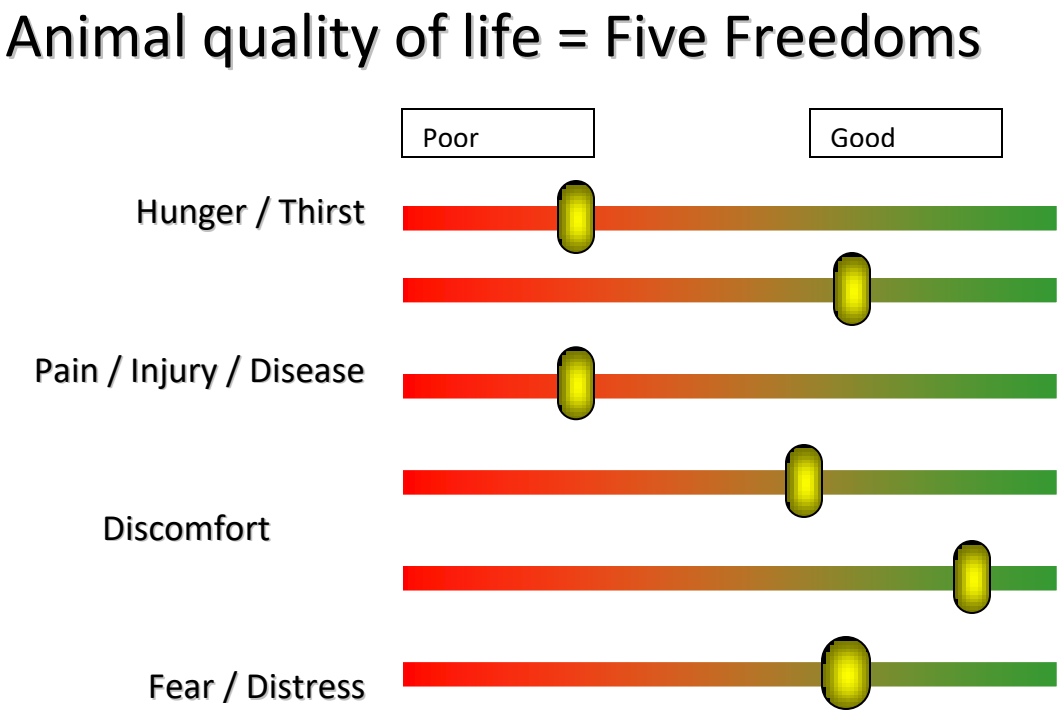


Diagram 2.3.: Assessment of welfare on animals

2.1.2. Assessment of overall animal welfare:

According to Welfare Quality® protocols, animal welfare assessments must take four questions into account:

- Are the animals properly feed?
- Are the animals properly housed?
- Are the animals healthy?
- Does the behaviour of the animals reflect optimized emotional states?

This last question may be the most innovative and controversial aspect. Simply put, it refers to the fact that animals should not experience fear, pain, frustration or any other negative emotional state, at least in a chronic or very intense way

2.1.3. **Principles and criteria from the Welfare Quality protocols(WQP)**

The WQP criteria for the assessment of animal welfare are**:**

.

- Animals should not suffer from prolonged thirst, i.e. they should have a sufficient and accessible water supply.
- Animals should not suffer from prolonged hunger, i.e. they should have a sufficient and appropriate diet
- Animals should have comfort around resting.
- Animals should have thermal comfort, i.e. they should neither be too hot nor too cold.
- Animals should have enough space to be able to move around freely.
- Animals should be free from physical injuries.
- Animals should be free from disease, i.e. farmers should maintain high standards of hygiene and care.
- Animals should not suffer pain induced by in appropriate management, handling, slaughter or surgical procedures (e.g. castration, dehorning).
- Animals should be able to express normal, non-harmful social behaviours (e.g. grooming).
- Animals should be able to express other normal behaviors, i.e. they should be able to express species-specific natural behaviors such as foraging.
- Animals should be handled well in all situations, i.e. handlers should promote good human-animal relationships.

  Negative emotions such as fear, distress, frustration or apathy should be avoided, whereas positive emotions such as security or contentment should be promoted

2.2. Recognize and report welfare problems

2.2.1. Recognize of animal welfare problems

Working animals, mainly equids, camelids and bovids, are draught animals that perform transport and traction activities. In developed countries technological development has resulted in animal power being minimized, however, in developing countries most agricultural operations are still being conducted by animals, and animal welfare is a major concern. Inadequate

knowledge and inappropriate attitudes and practices regarding the management and welfare of working animals are the main contributory factors to welfare problems. The paper highlights the situation of working animals in developing countries, especially those of equips in Africa and Asia and bullocks in India, which are examined as examples. There is much room for improvement in the welfare of working animals, via the provision of basic veterinary care, technical advice on health and husbandry, including foot care, improved design and maintenance of harnesses and other equipment, and the development of appropriate policies and legislation. The paper discusses the role of the World Organization for Animal Health in addressing these issues.

Traditionally, farm animal welfare has referred to minimal acceptable standards of farm animals. However, development of animal welfare science over the last decade have started to shift from providing acceptable welfare standards that minimize animal “harms” or suffering toward providing animals with “positive” welfare Acceptable standards of animal welfare can be determined by legislation, which may set the minimal standard that a society is prepared to accept in food production, and by retailer and other accreditation schemes, labels or standards that provide higher levels of animal care. The inclusion of positive animal-based welfare measures, such as the ability to move freely and a positive human-animal relationship, among the proposed guiding principles for OIE animal welfare standards reflects that positive welfare is now an active topic of discussion on the world stage . Assessing farm animal welfare concerns and improving standards is an ongoing process and one that requires significant scientific research and financial support the relative priority given to specific welfare issues can be determined by public concern, political interests, such as international trade or legislation, or by weighing the scientific evidence. Animal welfare science is a large field, since it embraces everything that may affect the physical and emotional state of the animal, its ability to cope and its overall quality of life. Governmental and funder resources for tackling animal welfare issues are often limited , therefore the prioritization of farm animal welfare issues can help identify which areas most require research funding and raise awareness of best practices.

2.2.2. Reporting of welfare problems

Animal caretakers, investigators, technicians and IACUC/ethics committee members all have distinct roles and responsibilities. Coordination is critical to the ultimate goal of assuring humane and ethical animal care in the performance of important scientific research. To be sure, the challenge faces trainers daily as they develop curricula and training programs in a variety of research settings. We have a wealth of information to share, but we must consider what the trainees truly need from us.

In regard to reporting, an effective training program must address the following questions.

- What is a concern? Provide examples and guidance on reporting; emphasize raising concerns proactively with the goal of preventing more serious problems.
- Who can report? Discuss the importance of each individual's willingness to take responsibility for reporting a concern or asking a question. Let employees know that they can report concerns on behalf of others.
- How to report? Review each option available for reporting concerns, and specifically note confidentiality and anonymity.
- Where to go with a concern? Identify members of the IACUC and other points of contact; list the locations of offices and confidential drop-boxes; and provide contact information relevant to the program's process.
- What happens afterward? Explain the process for conducting investigations, including reporting requirements; how conflicts of interest and confidentiality will be addressed; and Animal Welfare Act and anti-harassment protections.
- Why is reporting important? Discuss how proactive reporting creates opportunities for program refinement and improved animal welfare.

In addition, training the members of the IACUC or ethics committee about investigating reports of animal welfare concerns can be helpful in ensuring that the process is being done fairly and confidentially. A guideline for conducting interviews and reporting outcomes should be part of this training. Many factors must be considered and evaluated with every reported concern, such as whether there is a need for veterinary assessment of an animal's condition, whether any regulatory body or funding agency should be informed and whether a performance issue or

violation of employment policy may have occurred. A written process for assessing a concern, notifying the Institutional Official, selecting an impartial investigative team and assessing reporting requirements is useful in communicating the institution's response process to animal care staff, technicians and researchers. Every training session is an opportunity to build both a stronger animal care culture and a foundation for future refinements. There is considerable value in actively building communication and participation with all team members and stakeholders.

2.2. Safe handling of livestock

The term animal handling originates from when humans started to domesticate animals and handling of animals to some extent became a daily routine. Since then, many researchers and organizations have stated the importance of correct procedures for this. It has been shown that 6 handling routines that are stressful for animals can reduce their immune function and most likely result in lowered productivity (e.g. growth rate, meat production, milk production etc.) Being professional means being safe and humane. Good animal handling skills prevent staff from being injured. Good animal handling skills reduce stress for the animal. Safe and effective animal handling requires a thorough understanding of the normal behavior and responses of each species.

2.3.1. Handling of livestock

By measuring behavioural or physiological conditions, animal handling can be explained to a higher extent and welfare concept implemented. Safe and effective animal handling requires a thorough understanding of the **normal behaviour** and responses of each species. Everyone involved with the handling of livestock has a responsibility for the **wellbeing** of the animals in their care. All livestock handlers should be familiar with l**egislation** and **codes** of practice applicable in markets, during transport and up to the point of slaughter.

The objective of humane animal handling is to **move animals with minimum stress** to both the animals and handler. Considerate handling **reduces the risk to the animal of pain, injury and suffering.** Unfamiliar surroundings, noisy and aggressive handling, and the proximity of unknown animals or people can cause even the calmest of animals to become difficult to handle and much more likely to cause injury to themselves, other animals or handlers.

Handling, especially by unfamiliar handlers, has the potential to be a highly stressful experience for animals. By working in a quiet, calm and considerate manner, handling can be carried out efficiently, with less effort and with less likelihood of the handler or the animals becoming stressed or injured. Handling routines that are stressful for animals can reduce their immune function and most likely result in lowered productivity (e.g. growth rate, meat production, milk production

2.3.2. Personal hygiene

High standards of personal hygiene are essential. Hands shall be washed after handling chemicals, infectious materials, and animals and before leaving the animal rooms. Animal rooms shall be equipped with anti-microbial soap and dispensers and shall be utilized after hands-on work with animals. Shower facilities should also be made available for employees handling animals note: Avoid the use of solvents for washing skin. Solvents remove the natural protective oils from skin and can cause irritation and inflammation. In some cases, washing with solvent may facilitate absorption of toxic chemicals.

Personal effects such as backpacks and books that can serve as fomites should not be taken into animal rooms. Notepads and computers dedicated for research use or husbandry care are allowed in animal rooms.

Protective clothing and devices shall be worn by all personnel working with animals or their tissues. Outer garments (lab coats, coveralls and disposable aprons) shall be worn in animal rooms. These outer garments shall not be worn outside the animal facility. Covered shoes shall be worn when working in the animal facility. Depending on hazards, other specifications for shoes may be required in the facility. For example, AVS employees routinely wear skid-resistant, steel-toed shoes dedicated to each animal facility.

Under no circumstances are personnel permitted to eat, drink, smoke or apply cosmetics in animal rooms. Eating, smoking, drinking and applying cosmetics are allowed in designated areas only.

2.4. Humanely Handling of Sick Animals

Humanely handling is: Method of handling and practices that cause a minimum of excitement, pain, injury, or discomfort the outcome being to prevent avoidable suffering to the food animal (Manipulation humanitaire)

2.4.1. Providing Basic and Suitable accommodation

Definition: Any kind of shelter, refuge affording protection to animals

Housing**:** it is a place where livestock are living the whole day in intensive care or half a day in semi- intensive care.

A. Type of Accommodation /House

- **Primary Enclosures**

The primary enclosure (usually a cage, pen, or stall) provides the limits of an animal's immediate environment. Acceptable primary enclosures

- ✓ Allow for the normal physiologic and behavioural needs of the animals, including urination and defecation, maintenance of body temperature, normal movement and postural adjustments, and, where indicated, reproduction.
- ✓ Allow conspecific social interaction and development of hierarchies within or between enclosures.
- ✓ Make it possible for the animals to remain clean and dry
- ✓ Allow adequate ventilation.
- ✓ Allow the animal's access to food and water and permit easy filling, refilling, changing, servicing, and cleaning of food and water utensils.
- ✓ Provide a secure environment that does not allow escape of or accidental entrapment of animals or their appendages between opposing surfaces or by structural openings.
- ✓ Are free of sharp edges or projections that could cause injury to the animals.
- ✓ Allow observation of the animals with minimal disturbance of them.

- **Sheltered or Outdoor Housing**

Sheltered or outdoor housing such as barns, corrals, pastures, and islands-is a common primary housing method for some species and is acceptable for many situations. In most cases, outdoor housing entails maintaining animals in groups.

When animals are maintained in outdoor runs, pens, or other large enclosures, there must be protection from extremes in temperature or other harsh weather conditions and adequate protective and escape mechanisms for submissive animals. These goals can be achieved by such features as windbreaks, shelters, and shaded areas, areas with forced ventilation, heat-radiating structures, or means of retreat to conditioned spaces, such as an indoor portion of a run. Shelters should be accessible to all animals, have sufficient ventilation, and be designed to prevent build-up of waste materials and excessive moisture. Houses, dens, boxes, shelves, perches, and other furnishings should be constructed in a manner and made of materials that allow cleaning or replacement in accord with generally accepted husbandry practices when the furnishings are excessively soiled or worn.

Whether cows are housed in cubicles, straw yards or cow sheds, in order to maximize performance and to ensure satisfactory standards of welfare, the accommodation must at least provide for the animal's most basic needs.

As an absolute minimum, the housing must provide a comfortable, clean, well-drained and dry lying area together with shelter from adverse weather, space to allow the animal to move, lie down and rise freely as well as access to adequate food and water. All housing for cattle should include an adequate provision of calving pens and sick pens for isolation of sick or injured animals.

If the housing system does not provide for these basic needs, then not only will both production and welfare be compromised, but it is likely that you are also failing to comply with the welfare codes and the law relating to animal welfare in your area Housing should be comfortable, clean and well ventilated shelter for cattle.



Figure. 2.1. cattle housing

(https://www.farmhealthonline.com/health-welfare/cattle/housing/

access date, 27 August 2022)

B. Conditions required in to handle sick animal in animal house

- **Bedding**

Bedding is used to absorb moisture, minimize the growth of microorganisms, and dilute and limit animals' contact with excreta. Animal bedding is a controllable environmental factor that can influence experimental data and animal well-being. The veterinarian or facility manager, in consultation with investigators, should select the most appropriate bedding material. No bedding is ideal for any given species under all management and experimental conditions, and none is ideal for all species.

- **Feeding and Watering Through**

Feeding through: is equipment used for provision of feed for animal.

Watering through: is equipment used for watering of animals

- **Light**

Light can affect the physiology, morphology, and behavior of various animals. In general, lighting should be diffused throughout an animal holding area and provide sufficient illumination for the

well-being of the animals and to allow good housekeeping practices, adequate inspection of animals.

- **Ventilation**

The primary purpose of ventilation is to provide appropriate air quality and a stable environment. Specifically, ventilation

- ✓ Provides an adequate oxygen supply;
- ✓ Removes thermal loads caused by the animals, personnel, lights, and equipment;
- ✓ Dilutes gaseous and particulate contaminants including allergens and airborne pathogens;
- ✓ Adjusts the moisture content and temperature of room air; and,
- ✓ Where appropriate, creates air pressure differentials (directional air flow) between adjoining spaces

When designing new buildings, ventilation should be carefully considered as poor ventilation can cause health and welfare issues. Air circulation, dust levels, temperature and relative humidity must be kept within limits that are safe for both animals and humans.

2.4.2. Accessing essential feed and water

- **Feed: Assessment of Nutritional Status**

Before initiation of dietary therapy, the large animal patient must be examined to determine its nutritional needs. Animals may be anorectic owing to systemic disease, or they may be dysphagic owing to a mechanical (foreign body, abscess, poor dentition) or neurologic (botulism, tetanus, viral encephalitis) disease. Assessment of the nutritional status of the patient should include a measurement of the body weight (BW) and body condition score (BCS) of the animal and biochemical tests.

Although nutrition was once regarded as a supportive measure of low priority, it is increasingly being recognized as an important therapeutic intervention in the care of critically ill patients.

- ✓ **Rumen bypass protein or protected amino acids required for sick.**

Proteins are the major building blocks in the repair process and are important in maintaining the immune system. Protein requirements of the diseased and convalescing animals are usually higher than for the normal maintenance. An increased protein level promotes restoration of lean

body mass and increases palatability during the post-operative period. Feeding of higher levels of good quality protein promotes wound healing.

- ✓ **Fats and carbohydrates**:

These are excellent sources of energy, which is needed in larger amounts than normal for repairing the tissues affected by illness, injury or surgery and to fight infection. Increasing the fat level of the diet provides a more 'concentrated' food (calorie-dense) so that the animal can receive the higher levels of energy and other nutrients needed in a smaller amount of food. In most circumstances the amount of energy required per day is greater than the basal or maintenance energy requirement by the species. Fats and omega-3 fatty acids help to manage inflammation. Omega-3 long chain fatty acids help maintain joint mobility, skin health and digestion. In addition to protein and energy, certain minerals and vitamins have important roles to play in the healing process.

- ✓ **Micro nutrients:**

Diets designed for diseased animals must have the correct balance of minerals and vitamins to avoid the depletion of body stores and provide those needed for the period of recovery. Zinc and potassium improve wound healing. Vitamin B complex improves digestive (microbial) efficiency.

There are several feed additives that can be administered including vitamin B-complex boluses, dried brewer's yeast, or live cell yeast ***Aspergillus oryzae***, or feeding sodium bicarbonate.
Besides, herbal metabolic modifiers, antioxidant blends, prebiotics, and probiotics, etc. are also commercially available which could also be used as supplements/additives to augment the digestive capability and thereby invigorating the animal. The synergistic antioxidant complex (vitamin E, vitamin C, taurine and lutein) helps neutralize free radicals produced during body metabolism and promotes good health.

For calves, the resting energy requirement is approximated as DE (Mcal) = 0.07 BW (kg) and digestible protein as DP (g) = 3.5 BW (kg), which would equate to 3.50 Mcal (3500 kcal) and 175 g of protein for a 50-kg calf. These calculated values represent starting points for

formulating dietary therapy, and adjustment based on clinical response or specific medical conditions may be necessary.

Vitamin and mineral requirements, also available from NRC tables, can usually be met if an enteral diet is formulated with commercial complete feed pellets or pelleted hay. Although B-vitamin deficiencies do not occur naturally in cattle, supplementation may be beneficial in large animals with gastrointestinal diseases that result in the disruption of the normal tract flora that produce B vitamins.

✓ **Oral Supplementation**

Ruminants in particular may consume small quantities of fresh feed if it is offered frequently, whereas if the same quantity is offered in one feeding, it may be ignored after a few bites. Many dairy cows can be coaxed into eating hay if it is placed in the back of the pharynx by the clinician, and oropharyngeal stimulation may result in increased voluntary feed consumption. Fresh silage and dried brewer's grain frequently appeal to the hypophagic cow. Many sick ruminants benefit from grazing if grass is available.

- **Water**

Ordinarily, animals should have access to potable, uncontaminated drinking water according to their particular requirements. Periodic monitoring for pH, hardness, and microbial or chemical contamination might be necessary to ensure that water quality is acceptable Water Troughs; Water troughs are a good way to ensure clean drinking water for animals and to prevent pollution in streams and ponds. Watering devices, such as drinking tubes and automatic waterers, should be checked daily to ensure their proper maintenance, cleanliness, and operation.

2.4.3. Maintaining hygiene of sick animals

- **Sanitation**

Good sanitation is an integral part of humane animal housing. Proper cleaning and disinfection practices help reduce the transmission of infectious diseases to both animals and people, and result in a cleaner and healthier environment. A clean shelter also has the added benefits of increasing the comfort level of the animals and presenting a positive image of the shelter to the

public. Protocols for proper sanitation are essential for any sheltering program. Providing education and training as well as ensuring compliance with those protocols is also essential. The goal of any sanitation program is to maintain sufficiently clean and dry bedding, adequate air quality, and clean cage surfaces and accessories.

- **Cleaning and Disinfection**

Physical cleaning is defined as the removal of urine, fecal matter, and other organic material from the environment. Cleaning should result in a visibly clean surface, but may not remove all of the harmful pathogens. Disinfection is the process that will kill most of the contaminants in a given area . Sanitation is defined as the combination of cleaning and disinfection, and is a requirement for all shelters and rescue homes. Sterilization is the destruction of all microbes, including spores, and is generally reserved for surgical instruments, surgical gloves, and other equipment necessary for sterile procedures. .

2.5. Humanely way of Destroying un wanted animals

Definition of terms:

Treatment: it is a process of giving medication to sick or injured animal in order to recover from their illness

Euthanasia is thus the process of inducing a "good death." This would be a death that is swift and would involve little pain or distress.

Slaughtering: it is a processes of killing of animal for two main reason, the first one to fulfill/ meet human need as food (meat) source, the second one, is if animal are severely injured, or having non treatable disease, to reduce their pain and safer, we recommend to destroy them humanely.

Disposal: Sanitary removal of animal carcasses and other infected material by burial, burning or some other process, so as to prevent the spread of disease

2.5.1. Humanely way of destroying animals

Livestock owners and others who derive all or a portion of their livelihood from animal agriculture share a moral obligation to ensure the welfare of animals. Therefore, when:

- Fractures of the legs, hip or spine that are not repairable and result in immobility or inability to stand
- Emergency medical conditions that result in excruciating pain that cannot be relieved by treatment
- Animals that are too weak to be transported due to debilitation from disease or injury
- Paralysis from traumatic injuries or disease that result in immobility
- Disease conditions where no effective treatment is known, prognosis is terminal, or a significant threat to human health is present.
- If an outbreak of a transboundary animal disease or other serious disease occurs

Stamping-out policy is adopted for its control and eradication, it may be necessary to destroy a large number of animals. It is essential that these animals are speedily and humanely slaughtered and are indeed dead before disposal of carcasses commences. Speed is of the essence once the disease has been confirmed because, in most situations, the live animals will continue to produce and possibly disseminate the disease pathogen. An experienced veterinarian should be present during destruction.

When dealing with debilitated, injured, or disabled cattle the following actions may be taken: **treatment, slaughter,** or **euthanasia**. The decision making processes to which action to consider should include the following criteria:

- The level of pain and distress of the animal
- The possibility of recovery
- The ability of the animal to get to food and water
- Medications used on the animal
- Drug withdrawal times
- The economics of the circumstances
- The potential for condemnation
- Diagnostic information

If **euthanasia** is considered to be the appropriate alternative the following factors should be given careful thought when choosing an appropriate method:

- **Human safety**: This is always the first consideration in the choice of euthanasia. The use of a fire arm or even a captive bolt gun may be dangerous to humans. The use of a barbiturate over dose may produce a calm animal being euthanized quietly and easily.

- **Animal welfare:** The method of euthanasia c hosen should produce a rapid and painless death. However, certain environments and animal behavior may prevent the use of a more desirable technique. The technique chosen should be the method that is safest for both humans and animals alike

- **Skill:** The use of a fire arm or the use of a captive bolt will requires kill and training to assure correct use and minimize danger to others. The person using a fire arm must understand the potential forricochet. Designated individuals should be appropriately trained improper euthanasia a techniques wherever livestock are housed

- **Aesthetics*:*** Some methods of euthanasia appear more tolerable to observers than others. Some techniques result in involuntary motor activity of the animal, which could be misinterpreted as a painful response to observers in experienced in bovine euthanasia. This could result in great emotional distress to those observing the procedure.

Methods of Destruction/Destroying of animals are Un wanted animals.

a) Firearms (rifles and guns) in heart: when **r**abid or suspect rabid animals should be shot in the heart with a firearm to preserve the brain, which is the best diagnostic specimen, and to avoid contamination of personnel with potentially infective brain or saliva. Animals with bovine spongiform encephalopathy (BSE) or scrape should not be shot through the head, as brain tissue is required for diagnostic testing.

b) **Firearms (rifles and guns) on brain :** if you are not suspect rabies or BSE

Ensure compliance with any firearm licensing requirements, including the use of trained and approved operators for rifles and guns. This in recommended, in rabies having dogs or livestock. Since they are aggressive.

Advantages of using firearms

The advantages of firearms are:

- clean kills in the hands of experienced operators;
- handling individual animals is not necessary;
- destruction of animals from a distance;
- firearms and ammunition are readily available;
- Many people are proficient in their use.

Disadvantages of using firearms

The disadvantages of firearms are:

- they are potentially dangerous;
- They are unsuitable for use close to populated areas.



Figure.2.1. Euthanizing by firearm (gun)

Source ;(https://www.grandin.com/humane/cap.bolt.tips.html) 2/09/2022

The aim of any destruction technique is to achieve euthanasia in a single treatment by a rapid loss of consciousness, leading to death with no return to consciousness, and with an acceptable, minimal level of stress to the animal before its death.

In an emergency animal disease (EAD) outbreak, it may be necessary to destroy a large number of animals quickly. It is essential that these animals are speedily and humanely slaughtered and that they are indeed dead before the disposal of their carcasses begins. Speed is essential in most outbreaks, because live animals will continue to produce and possibly disseminate the pathogen.

It is important that the death of the animal be confirmed at an appropriate interval after killing procedures and before moving the carcass for disposal. It is the responsibility of all in the destruction team to ensure that animals are correctly assessed to be dead.

2.5.2. Disposal of dead animals and other

Commercial livestock operations are normally subject to mortalities and therefore generate many carcasses for disposal. Proper disposal of dead livestock is extremely important to protect the health of both people and livestock. Any animal carcass may contain bacteria and other disease organisms that can infect humans directly or through contamination of a residential water supply. Disposal of dead livestock must be in accordance with the Waste Materials Disposal Act.

Mortalities must be kept in a secure and frozen state if not disposed of within 48 hours of the time of death. A secure state would be one where scavenger animals such as coyotes, wolves (in Labrador), dogs and birds, are prevented from access to the mortalities. Disposal is specified to be by delivery to a rendering plant, burial, composting or incineration. Leaving mortalities outside for scavengers to feed on is not an acceptable method of dead animal disposal

Only animal waste from the keeping of domestic animals is accepted. A maximum of two bin liners can be deposited per household per day, and waste must be double bagged before disposal. Please inform site staff of the waste type before placing in the household waste bin for final disposal. Waste from livestock, breeding, boarding, stabling or exhibiting of animals is not accepted.

- Dead animals;
- Animal health care products;
- General packaging (for example, boxes, bags, plastics);
- Petroleum products such as used motor oil;
- Paints and preservatives;
- Pesticides;
- Machinery and equipment including inert components, tires and restricted use
- Components such as batteries;
- Farm structures such as old buildings including building components; waste forage; and,

- Waste fruit and vegetables (including organic waste dumps).

Methods of disposal for dead animals

1) Rendering

Delivery of the carcasses to a rendering company is the preferred method for disposing of dead animals. Currently, a rendering plant (Roth say Rendering Plant) operates at Fox trap. Rendering companies may have certain restrictions regarding the condition of the carcass. In general, the animals must be brought in as quickly as possible in the summertime. Smaller animals that die during the winter can be frozen and delivered to the renderer at convenient intervals. Rendering companies will generally not accept dead animals that do not remain intact when handled. Depending on the end product of the rendering process, there may be restrictions on carcass quality and condition.

Rendering companies that produce meat and bone meal and inedible tallow will usually accept mortalities regardless of the course of death; companies that produce an edible material may not. If a processor is not nearby, however, the time and expense for travelling may make delivery impractical for small numbers of dead animals or farms located far away from the plant.

If this is the case and the dead animal is small in size (for example, piglets), you must freeze and store mortalities until such time as the animals can be buried or incinerated. Fur farms in Newfoundland and Labrador accept mortalities and cull or off-sex animals as feed. Fur farmers are also feeding fish waste, meat cuttings and some wild animals killed on roadways (such as moose). Disposing of birthing mortalities is not considered a major issue in the province as adult animals often disposes of these naturally.

2) Burial

During the summer months, the carcass can be buried if a rendering service is not available. The Waste Materials Disposal Act prohibits the disposal of waste materials on any lands which are not waste disposal sites approved by the Government Services Centre. Place dead animals in a trench that is backfilled each time animals are added. Caution is required for burial of dead animals. While at one time carcasses could be brought to sanitary landfills, this is no longer possible in many areas. Municipalities that bury their refuse on a daily basis may allow animals

to be deposited in landfill sites. Check with your local municipal office to determine if this is allowed in your area.

Ensure that the burial pit is or has:

- At least 90 meters (300 ft) from wells or domestic water intakes;
- At least 30 meters (100 ft) from any other surface water;
- Constructed such that the bottom of the pit is 1.2 meters (4 ft) above the high water table;
- Sized for a maximum of 700 kilograms (1,500 lb);
- Hydrated lime (quick lime) to speed up decomposition and deter scavengers and insect infestation; and,
- A minimum 0.6 meter (2 ft) of soil covering the carcasses (offers protection from scavengers that will drag the carcasses around, creating both a nuisance and a possible health hazard).

Dead animal burial pits need the approval of a Government Services Centre, Department of Government Services and Lands. Contact the regional Government Services Centre for details. During the winter it is advisable to put dead animals in a holding area, such as a covered trailer, where they can remain frozen until burial is possible in the spring.

3) Composting

Composting dead animals is becoming more popular in Canada and, as local experience is gained, it is anticipated that some farm composting facilities will be constructed in the future. Operations using composting of mortalities must be designed and managed in such a way that they do not cause pollution. An aerobic environment must be maintained, and all material must be heated throughout to a temperature of 55C (130? F) For at least three days for adequate reduction of pathogen levels. Where composting is employed for dead animal disposal, they must:

- be of sufficient capacity to dispose of normal mortality rates; have all contaminated runoff collected, and clean surface water directed away from the composting facility;

- Be located to take the farm residence and any neighboring residences into account. While offensive odors' are not usually generated in the composting process, the handling of dead livestock and compost on a daily basis may not be aesthetically pleasing. When locating a composter, consider traffic patterns required in moving dead livestock to the composter, moving the required ingredients to the composter, and removing finished compost from the composter; and,
- Be situated on a well-drained site and must provide all-weather capability for access roads and work areas. Where this is not a common practice in Newfoundland and Labrador, such composting would be appropriate if initiated on a small scale in consultation with the appropriate agricultural and environmental agencies.

Fully composted animals, where there is no sign of bones or other materials, can be added to manure for eventual land spreading. For the proper design of a composting facility for dead animal disposal, qualified professionals should be consulted.

4) Incineration

Incineration is an acceptable method of disposal if performed properly. For the dead animals to be burnt without creating an odor problem, the temperature of the incinerator must be sufficiently high. Where incinerators are employed for dead animals' disposal, they must:

- where possible, be located so that prevailing winds carry exhaust fumes away from neighbors;
- have sufficient capacity so that all odour levels stay within tolerable limits;
- be 50 m (160 ft) minimum from wells or domestic water intakes;
- be fire safe; and,
- Consume all material fed into them.

The installation and operation of any incinerator must be in compliance with the Environment Act. Generally, a single chamber-two burner type of incinerator, or equivalent, will be required. Single burner incinerators are not recommended.

For the proper design of an incinerator for dead animal disposal, qualified professionals should be consulted. An incineration shall be operated to meet the maximum requirements of 0.5 hour retention time in the chamber at 1400-1600oF. Disposal at an approved landfill site or incineration at an approved waste disposal site with the consent of the owner/operator in acceptable.

2.5.3. Clean, maintain and store equipment, materials and facilities in line with manufacturer's specifications

- Buildings maintained in clean/sanitary condition
- Free of infestation by rodents, birds, insects, and other vermin
- Trash and organic waste held and disposed of in a timely and sanitary matter
- Written sanitation procedures to include schedules, methods, equipment materials for cleaning of buildings and facilities
- Written procedures for use of suitable rodenticides, insecticides, fungicides, fumigation agents and cleaning and sanitation agents to prevent contamination
- Sanitation procedures also apply to contractors and temporary employees as well as full-time employees during the ordinary course of operations.

Equipment used in the manufacture, processing, packing, or holding of a drug product shall be of appropriate design, adequate size, and suitably located to facilitate operations for its intended use and its cleaning and maintenance cleaning and maintenance activities are to prevent malfunctions which could lead to contamination of a drug product. Written procedures for cleaning and maintenance of equipment should be established and followed. Records SHALL be kept for cleaning, sanitizing, maintenance and inspection.

Disinfectants are chemical agents that kill pathogens on contact. The choice of disinfectant depends on the purpose of disinfectant. In the case of notifiable disease, it must be active against a defined pathogen. In the case of prophylactic disinfection, it must be active against abroad spectrum of microorganism. Disinfection in animals house/premises includes the following:

- Livestock buildings.
- Livestock/ their feed transportation vehicles.

- Incubators
- Hatching tray
- Milk tankers
- Milking machines
- Feeding and drinking utensils.
- Bedding materials etc….

Types of disinfectants: They are grouped in to 5 chemical categories

1. Soap and detergents
2. Oxidizing agents
3. Alkalis
4. Acids
5. Aldehydes

Soap and detergents: Are essential components of cleaning procedures prior to many of decontamination procedures. The primary aim is the removal of organic material, dirt, greases from the surface to be disinfected. Mostly important in hospitals, surgeries, dairies, food processing areas. Soapy combination of phenolic or quaternary ammonium (QUATS) & idphors are used.

2.6. Assessing environmental implications on livestock husbandry practices

There are significant differences in the environmental impact between **species,** and between the different forms of livestock **production.** Both intensive and extensive production systems may damage the environment, but in different ways. Pressure to expand production, either through intensification (increasing output per unit of land by increasing non-land inputs) or area expansion (increasing output by expanding land in production without changing inputs per unit of land), can have negative environmental consequences unless the value of common-property resources and the cost of negative externalities are fully recognized and accounted for.

- **Species**

Cattle provide many products and services, including beef, milk and traction. In many mixed farming systems, cattle are usually well integrated in nutrient flows and can have a positive environmental impact. In many developing countries, cattle and buffalo provide draught power for field operations; in some areas, particularly parts of sub-Saharan Africa, use of animal

traction is increasing, substituting for fossil fuel use. Cattle manure is a good fertilizer; it presents a low risk of over-fertilization and improves soil structure.

Livestock also use crop residues and agro-industrial by-products, such as molasses cake and brewers grains, some of which would otherwise be burned. However, cattle in extensive production systems in developing countries often have limited productivity. Moreover, cattle in feedlots require more concentrate feed per kilogram of output than do poultry or pigs; as a result, they have significantly higher resource requirements and hence greater environmental impact.

- **Production systems**

The livestock sector is undergoing structural change towards more capital-intensive systems, specialized and larger production units relying on purchased inputs, higher animal productivity and greater geographical concentration. This has altered the environmental impacts of the sector. It has also offered the sector new options for mitigating such impacts, with a range of cost, socio-economic and gender implications.

The principle livestock production factors influencing their environmental impact are identified as the balance between different farm animal types and the husbandry practices used for these species, the variable potential which exists for the recycling of wastes and the modification of inputs to systems, the extent to which animal production can be integrated into more holistic farming systems and the impact of livestock on wild life biodiversity. Impacts of climate change on grazing livestock production systems may include:

- ✓ Increased frequency of extreme weather events
- ✓ Increased frequency and magnitude of drought and floods
- ✓ Productivity losses (physiological stress) due to temperature in crease
- ✓ Change in water availability (may increase or decrease, according to region)

2.7.Constructive solutions in case of animal welfare violation

The Five Freedoms and Provisions framework was established to provide guidance on defining the welfare status of an animal, signifying their nutritional, health, behavioural, environmental, cognitive, and physical needs, and the required provisions to meet these needs (Table 1). More recently, conversations on animal welfare have shifted to incorporate ‘a life worth living’. This

concept recognizes that in some instances, negative experiences (such as those encountered by animals used in food production) cannot be eliminated. Instead, animal owners should not only comply with minimal welfare standards, but also include significant welfare enrichments

Table 1 the Five Freedoms framework for animal welfare provision

No,	Five Freedoms Five Provisions	Five Freedoms Five Provisions
1	Freedom from hunger	Thirst and malnutrition Ready access to fresh water and a diet to maintain full health and vigour.
2	Freedom from discomfort	Providing a suitable environment including shelter and a comfortable resting area.
3	Freedom from pain, injury and disease	Prevention or rapid diagnosis and treatment.
4	Freedom from fear and distress	Ensuring conditions avoid mental suffering.
5	Freedom to express normal behaviour	Providing sufficient space, proper facilities and company of the animals own kind.

Stereotypic behaviours are signs of psychological dysfunction and/or motivational frustration and as such, the ideal is avoidance of the stressors or environmental deficits before occurrence, and early intervention on occurrence to avoid development of abnormal cognitive function. Such early intervention should include the consideration of psychopharmacology, which has been shown in some cases to result in better treatment outcomes than environmental modification alone. Animal welfare relates to both the physical health and mental wellbeing of the animal or group of animals, as encapsulated by the five welfare needs which are enshrined in the Animal Welfare

Examples of such failures might include inappropriate housing, excessive noise, inappropriate diet or insufficient food or water, social stressors such as overcrowding or isolation, confinement, or extremes of temperature. It should be recognized that all animals under the control of man are, to a greater or lesser extent, subject to an environment that is artificial and it is therefore contingent on animal keepers and owners to ensure appropriate management of that environment such that the welfare needs of the animal or group of animals are adequately met In

general providing information related to behavioral change of animals for owner Constructive solutions needed to be offered include;-

- Looking at the owner-animal-environment triangle of effect in the expression of problem animal behaviour and offering remedial advice
- Considering different methods of handling and dealing with animals displaying specific behavioral traits (e.g. Nervous or timid)
- Endeavoring to remedy the causes as well as the problem animal behaviour for wandering animals the constructive solution May include, but not limited to:
  - ✓ restoring animal to correct owner property
  - ✓ capture and impoundment
  - ✓ offering advice regarding more adequate fencing
  - ✓ providing advice regarding: a more enriched environment
  - ✓ Improving obedience and responsiveness using positive and negative reinforcement training.
  - ✓ Further information follows regarding physical hazards and ways to minimize the risk of injury from physical hazards should be provided.

NB. To apply and maintain good animal welfare, the following corrective measure has to be taken

- **Steps to working with Behaviour Problems**
  - ✓ Have the animal checked by a veterinary surgeon for pain or medical conditions
  - ✓ Establish possible causes of behaviour
  - ✓ Seek professional advice
  - ✓ Study and research the behaviour problem
  - ✓ Create a shaping or training plan
  - ✓ Create a safe environment in which to work
  - ✓ Allow plenty of time for training
  - ✓ Take small steps and do not rush
  - ✓ Reward good behaviour (**Positive Reinforcement)**--the term reinforcement always indicates a process that strengthens a behavior; the word positive has two cues

associated with it. First, a positive or pleasant stimulus is used in the process, and second, the reinforce is added (i.e., "positive" as in + sign for addition). In positive reinforcement, a positive reinforce is added after a response and increases the frequency of the response

- ✓ Expect behaviour to get worse before it improves
- ✓ Listen to the animal's s body language.

- **Maintain good animal handling and Restraining**

✓ **Handling:**

- Animals should not be whipped or hit with objects that could cause injury, pain, or harm.
- Kicking, prodding, or any other forceful actions should not be used on non-ambulatory animals
- The use of sharp or hard solid objects to move cattle is not acceptable.
- Avoid slippery surfaces, especially where cattle enter a single file alley leading to a chute or where they exit the chute. Grooved concrete, metal grating (not sharp), rubber mats or deep sand can be used to minimize slipping and falling. Quiet handling is essential to minimize slipping. Under most conditions, no more than 2% of the animals should fall outside the chute. A level of more than 2% indicates a review of the process may be of value, including asking questions such as: is this
- Animals temperament issue, has something in the handling area changed that is affecting cattle behavior, etc.?
- Take advantage of cattle's flight zone and point of balance to move them. For safety and welfare reasons, minimize the use of electric prods. Non-electric driving aids, such as plastic paddles, sorting sticks, flags or streamers (affixed to long handles) should be used to quietly guide and turn animals. When cattle continuously balk, cattle handlers should investigate and correct the reason rather than resort to overuse of electric prods.

✓ **Restraining of animals.**

- Effective restraint is an important part of veterinary medicine that we simultaneously take for granted but also need to be successful. Restraint techniques are passed on in an almost cultural fashion with sometimes little thought given to

their logic and effectiveness. Historically, animals were restrained by physically overpowering them. This often resulted in injury to the animal or involved personnel, and/or the restraint attempt failed which prevented successful completion of the intended procedure. Because restraining of animal has a role of :

a. Prevents injury
b. Necessary for examinations and treatments
c. More comfortable for animal and handler
d. A First Aid Kit should be available for all bites and scratches
e. All Animal bites must be reported to the NY Dept. of Health

- Choosing techniques that build on natural behavioral responses results in more empathy and awareness of the animal as well as a greater likelihood of success.
- Safety and success are much more likely when personnel strive to reduce actions that the animal may view as threatening or aggressive. Adversarial handling typically increases the probability of the animal becoming aggressive or attempting to escape

- **Corrective measure. Related to poor transportation of livestock's. .**
  - ✓ Knowingly inflicting physical injury or unnecessary pain on cattle when loading, unloading or transporting animals is not acceptable
  - ✓ Cattle sorting and holding pens should allow handling without undue stress, be located near the loading/unloading facility and be suitable for herd size.
  - ✓ Provide properly designed and maintained loading facilities for easy and safe animal movement. Proper design of loading chutes as well as personnel that are knowledgeable of their proper use can assure the safety of both cattle and cattle handlers. Ramps and chutes should be strong and solid, provide non-slip footing, and have sides high enough to keep cattle from falling or jumping off. A ramp angle of 25 degrees or less will improve cattle movement.
  - ✓ All vehicles used to transport cattle should provide for the safety of personnel and cattle during loading, transporting and unloading.
  - ✓ Strictly adhere to safe load levels with regard to animal weight and space allocation.
  - ✓ Producers hauling cattle in farm and ranch trailers must ensure that adequate space is provided so that cattle have sufficient room to stand with little risk of being forced down because of overcrowding.

- ✓ Cattle that are unable to withstand the rigors of transportation should not be shipped.
- ✓ When the vehicle is not full, safely partition cattle into smaller areas to provide stability for the cattle and the vehicle.
- ✓ No gap which would allow injury to an animal should exist between the ramp, its sides, and the vehicle.
- ✓ Vehicle doors and internal gates should be sufficiently wide to permit cattle to pass through easily without bruising or injury. • Cattle should be loaded, unloaded, and moved through facilities with patience and as quietly as possible to reduce stress and injury

- **Corrective measure /or welfare for animals slaughtered in abattoir.**

The first principle of animal handling is to avoid getting the animal excited. It takes up to 30 minutes for an animal to calm down and its heart rate to return to be normal after rough handling. Calm animals move more easily and are less likely to bunch and be difficult to remove from a pen. Handlers should move with slow, deliberate movements and refrain from yelling. Animals may become agitated when they are isolated from others. If an isolated animal becomes agitated, other animals should be put in with it. Electric prodders (prods) should be used as little as possible or only on stubborn animals. However it is more humane and causes less damage to give an animal a mild electric shock than to hit it with a stick or twist its tail to stunning.

Self-Check – 2	Written test

Name…… ID…… Date…….

Directions: Answer all the questions listed below.

Test I: Short Answer Questions (each has 3 point)

1. Write the three welfare assessment approach
2. List the type of feed provided for sick animals
3. What is euthanasia
4. List the Methods of disposal of dead animals?

Test II: Multiple choices(each has 1 point)

1. Among the following which one animal based welfare?

   A, presence of injury B, incidence of disease C, BCS D, Housing

2. Among the following which one is used to kill all the microorganism and its spore

   A, cleaning B, Sterilization C, Disinfection D, Boiling

3. Which one is not an examples of overall welfare assessment indicator

   A, proper feeding B, having good health

   C, properly housing D, disease

4. Which one is not used to handle sick animals

   A, using accommodation C, keeping sanitation

   B, feeding D, Deprivation water

5. Among the following wich one is not a method of dead animal disposal?

   A, Burial B, Rendering

   C, compositing D, leave in open space

Note: **Satisfactory rating – 9 points Unsatisfactory - below 9 points**

You can ask you teacher for the copy of the correct answers.

Operation Sheet 2.	Performance Test

2.1. Animal welfare ethics to Load and unload animals for transportation

A. Tools and equipments

i. Vehicle with it feted tools used for separating each animal separately
ii. Cattle
iii. Cleaning material (shovel, brush, etc)
iv. Feed
v. Elevator,
vi. Bedding materials (prevent slipperiness of flour

B. Procedures/Steps/Techniques to clean veterinary tools and equipments

- identify the animals to be transported and prepare them for travel in an appropriate manner
- ensure the transport is suitable
- load the animals using an appropriate method and in a manner that minimizes their stress and risk of injury
- establish the animals within the transport and make them safe and secure for the journey
- contain the animals in a manner that optimizes their welfare and is consistent with relevant legislation and codes of practice
- use working methods and systems that promote health and safety and are consistent with relevant legislation and codes of practice
- P7 check that the new environment is prepared to allow for the safe receipt of the animals
- unload the animals using appropriate methods and in a manner that minimizes their stress and risk of injury
- safely establish the animals in their new environment
- monitor and maintain the health and well-being of the animals throughout
- maintain appropriate levels of hygiene and bio-security
- take appropriate action without delay where there are any concerns over the animals' health and well-being

- keep accurate and up-to-date records as required by relevant legislation and the organization
- carry out all work in accordance with relevant environmental, health and safety legislation and animal health and welfare legislation, risk assessment requirements, codes of practice and company policies

2.2. Dispose dead animal by burial method

A. Tools and equipments

I. PPE(leather or rubber glove, boots , coverall mask, etc)
II. Shovel
III. Pos hole digger
IV. Plastic to wrap carcass

B. Procedures/Steps/Techniques to dispose dead animal by burial

- Wear PPE
- Thoughtful selection of the burial site
- Dig the enough (1.2 metres (4 ft) for 700kg body weight animals
- Wrap the carcass in plastic bag
- Place it in box
- Carefully buried underground.
- Fill the land properly

.2.3. **Preparation cleaning and disinfecting of foot wear to visit farm for visitor to maintain bio security**

A. Tools and equipments

i. PPE
ii. Enough water
iii. Different chemicals /detergents (bleach, Lysol, virkons, virocid etc)
iv. Brush
v. Bath hole or containers.
vi. 1% active sodium hypochlorite

B. Procedure or techniques to maintain foot wear cleaning and disinfection.

Step 1: Cleaning step of the Poultry Farm Foot Bath

- remove all visible debris to make boots fee of debris
- wash the boots by water, and soap

Step 2: Washing step of the Poultry Farm Foot Bath

- Bring larger container which can fit a large boot
- Adding some soap or detergent to the water can clean better than using water alone
- If shoes were very dirty to begin with, use the scrubbing brush

Step 3: Disinfection step

- A second footbath should contain disinfecting products .These must be refreshed regularly as build-up of dirt and rain water in these solutions will lessen their effectiveness.
- You can use bleach diluted to 1% active sodium hypochlorite (the active ingredient in bleach).
- , dilute a bleach solution which is 4% active sodium hypochlorite using three parts water to one part bleach.

2.3. Establish foot bath station

A. Tools and equipments.

i. heavy-duty scrubbing brushes and scraping tools such as a horse pick or a screwdriver
ii. at least two heavy-duty plastic containers
iii. water for the footbath and rinse tub
iv. registered decontaminant (check the APVMA database; see below for further details)
v. drying material: something clean, porous and non-slip, such as hessian bags, rubber mats or towels and
vi. a tarpaulin (if footbaths are to be placed on a dirt surface)

B. procedure or techniques to prepare foot bath station

- 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.

LAP TEST-2	

Name……ID……..

Date…….

Time started: _____ Time finished: _____

Instructions: To perform cleaning and disinfecting foot wear, check the presence of all required tools and equipments. Time allowed, 1hour for loading of animal for transport, 30 minute to wash, and disinfect foot wear and 1hr to establish setup of foot bath in a farm daily. .

Task1: Load and unload animals for transportation

Task 2: Dispose dead animal by burial method

Task 3. Preparation cleaning and disinfecting of foot wear to visit farm for visitor

Task 4.: Establish foot bath station

LG #22	LO #3- Identify animal behavior

Instruction sheet 3.

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

- Understand animal behavior and body language
- Identifying temperament, traits, health and wellbeing of animal
- Assess physical and social environment of animal
- Follow policies, procedures and legislative
- Referring and Taking legal response to animal behavior

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:

- observe and interpret animal and its body language
- identify and document temperament, traits, health and wellbeing of animal
- assess physical and social environment of animal
- Determine. behavior of animal
- Follow organizational policies and procedures and legislative requirements.
- Offer the owner referral to specialists when appropriate.
- Take Legal response to animal behavior when appropriate

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

Information Sheet 3:

3.1. Understand animal behavior and body language

Body language: is an expression of the whole animal, how it holds itself, moves about and interacts with its surroundings. An animal may for example behave in a way that appears calm, nervous, tense, relaxed or distressed. Transfer of information between animals through any of the senses.

Animals meet with others in various ways; through reproduction and the raising of the young, in defining and observing rank, through defending territory, and mutual warnings against dangers and enemies. All this and much more depend on an animal understanding the moods and intentions of others of its kind, on adapting its own behavior to these cues, and influencing the behavior of others in turn.

Since animals, unlike humans, have no words to communicate with each other they use signs of all kinds. This nonverbal communication plays an important role for us humans, too, both as a complement to and a precursor, which means one that precedes and indicates, suggests, or announces someone or something to come, of language.

Most of the signs of "animal's language" are transitory (existing or lasting only a short time; short-lived or temporary), with facial expressions, gestures, and sounds. Many animals also leave more permanent signs that others of their kind recognize and understand even when the animal leaving the sign is no longer there Signs are meaningless if those they are intended for fail to perceive them, observe them, or understand them. Giving and interpreting signals is innate (possessed at birth; inborn), in all animals, including humans. Mammals, even if they spend most of the year without contact with others of their kind, still have to meet and understand one another during mating. The encounters with rivals and the subsequent rearing of their young make body language very important.

Communication: is when one animal transmits information to another animal causing some kind of change in the animal that gets the information. Communication is usually between animals of a single species, but it can also happen between two animals of different species.

- Signaling between one animal & another
  - ✓ Greeting e.g. sniff, hug, kiss
  - ✓ Aggression e.g. charge, bite, hit, fight
  - ✓ Non-aggression e.g. patting, head butting, stroking
- Verbal signaling (vocalization)
  - ✓ E.g. bark, howl, hoot, chirp
- Non-verbal signaling
  - ✓ E.g. body, head, ear, & / or tail position
  - ✓ Showing teeth, smiling, sign language

Animals communicate using **signals**, which can include visual; auditory, or sound-based; chemical, involving **pheromones**; or tactile, touch-based, cues.

Below are some common types of signals:

- Pheromones—chemicals
- Auditory cues—sounds
- Visual cues
- Tactile cues—touch

3.1.1. Behavioral expression of different animal species

- **Cats Body Language Facial Expressions and Gestures** .

  When cats use these muscles to position their heads, bodies, and limbs, including the tail, to carry a message or to give a signal, these movements are then called gestures. Some common gestures of cats are:

  - ✓ **Threat of attack:** The ears are turned so that their backs are visible from the front; the head is held sideways and slowly sways from side to side at every step; and the eyes are glued on the enemy. When the head is stretched forward this indicates a readiness for contact.

- ✓ **Yawning:** Yawning is not as contagious in cats as it is in humans. Seeing another cat yawn does not make a cat **sleepy.** Instead, yawning is more of a sign of reassurance, expressing something as "I'm feeling peaceful, and I hope that you are too."
- ✓ **Body:** If the body is stretched, the cat feels sure of itself or is prepared to attack. A contracted body or a back arched in typical cat fashion indicated fear and readiness for defense.
- ✓ **Legs:** Legs that are stretched to their full length are a sign of self-confidence and even of readiness to attack. Bent hind legs, on the other hand, indicate uncertainty or even being timid.
- ✓ **Tail:** The motion of the tail if moving quickly and jerkily from side to side shows high excitement. A still raised tail is a friendly greeting and an invitation to sniff. If the tail whips up suddenly this is a threat of attack.

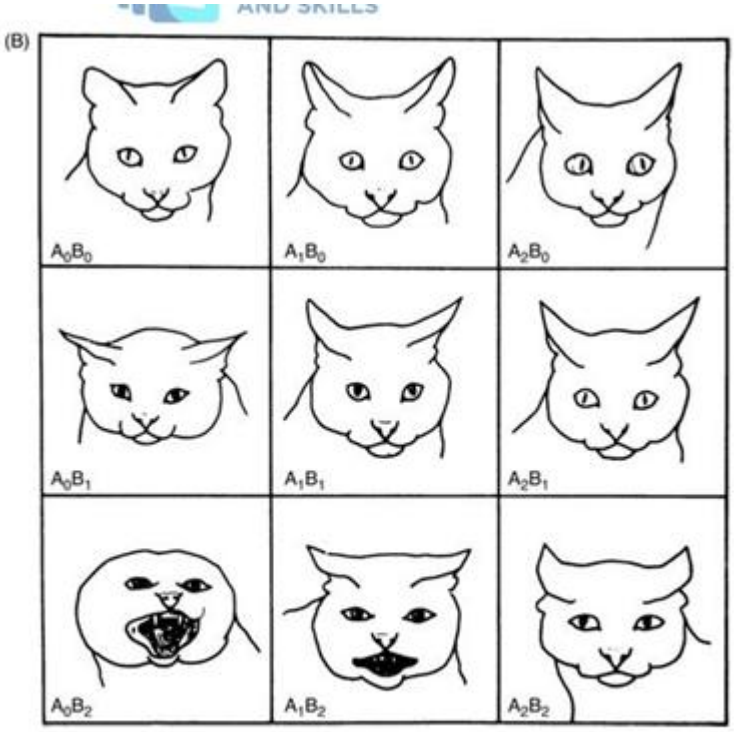


Fig1.1j, Facial expressions of the cat.

A2B0 is offensively aggressive; A0B2 isdefensively aggressive.

Figer 3.1. Cat showing Facial expression

1.1i and 1.1j

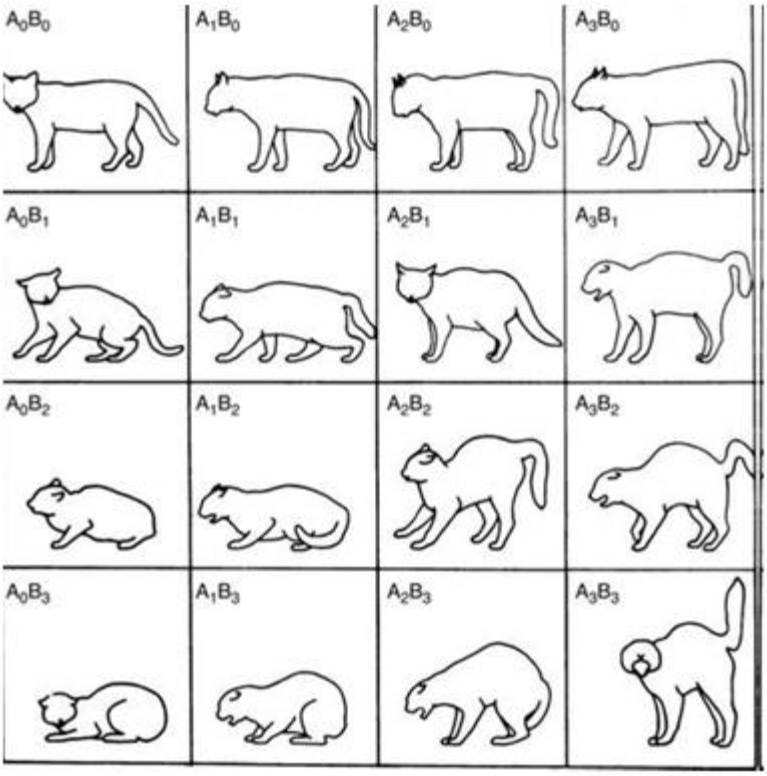


Fig. 1.1i.Body postures of the cat. Aggressiveness is increasing from A0 to A3, fearfulness from B0 to B3. A3B0is the most aggressive cat, A0B3 the most fearful, and A3B3the defensively aggressive cat.

Figure 3.2. body posture of cat showing

- **Donkey Body Language**

Humans and donkeys have lived together and worked side by side for 6,000 years. In many depictions of them, donkeys are stubborn, thick-headed, and especially stoic. When I got my first donkey, I wondered; “Are donkeys as stoic as they appear, or are they able to express their emotions?

Donkeys appear to be stoic creatures, but with close observation, it becomes evident that donkeys, like horses and mules, demonstrate a full range of emotions and pain. Because their expressions are subtle, it is incumbent on their owners to spend time with them to monitor their well-being.

It can be difficult to understand donkey behavior. Fortunately, several studies have been able to isolate individual behaviors used almost universally by donkeys that identify their feelings. I'll cover the basics below. You can also check out this article on how to bond with your donkeys.

- **A Donkey's Ears: Tell-Tale Signs of Emotion**

A donkey's ears are the greatest indication of its overall physical and mental state. If your donkey's ears are both forward and both erect but to the side, you probably have a healthy donkey. Your donkey is interested in its surroundings and finds nothing of concern in its environment.

If its ears are consistently both back or both down, you're going to want to observe it carefully for other signs of distress. Donkeys in pain are especially likely to have their ears down.
If your donkey's ears are pinned flat to the back of its head, you'll want to give it some time and space to calm down. Pinned-back ears are a sign of aggression.

One ear to the side and one flat back may indicate distress, though it could also mean that your donkey is focused on a sound on one side of its head. Some ear presentations may be either distress OR comfort; other indications (such as muzzle and nostril positions) are required to decide.



Figure: 3.1. Donkey two ear erected

Source (https://bestfarmanimals.com/everything-you-need-to-know-about-donkey-body-language/ 3/09/2022)

If your donkey is in a state of high anxiety, it may rapidly move its ears back and forth. This should be read as a “Leave me the heck alone” sign. This donkey’s forward-pointing ears suggest she’s happy and alert.

- **A Donkey’s Neck and Head Position: Assessing Well-Being**

A donkey’s neck isn’t often the type of body language owners look to assess their donkey’s overall well-being. But, studies have shown that the neck and head position gives great indicators of a donkey’s emotional health. When your donkey is on high alert, it will have a raised head. Depression is usually manifest with a llowered head. A level head indicates a calm demeanor.

A donkey on high alert is more likely to attack than retreat. Unlike horses, who spook readily and run, donkeys stand their ground, assess the situation, and then decide to take action. The first time I brought a new animal to our farm, I proudly introduced him to our donkeys by plopping the lamb down in front of the donkeys. It took two minutes for the dominant female to raise her head, rear up, and try to trounce the little fella. Fortunately, my husband, I, and our LGDs were there. The lamb was ok, but we learned quickly about how to better introduce new animals to donkeys that day. Since then, we introduce new animals to our donkeys slowly. New animals are introduced through a fence for a couple of weeks. Then we watch carefully for our donkeys’ responses when we finally put them together. We make sure there are no displays of aggression from the donkeys. It is a harrowing sight to see donkey aggression; even miniature donkeys can do serious damage when they are provoked.

- **A Donkey’s Response to its Environment**

The third strongest indicator of a donkey’s well-being is its response to its environment. A thriving donkey is curious and inclined to engage with its environment. This may mean **sniffing** an outstretched hand or showing interest in or moving toward people within its range. A distressed donkey may show avoidance, aggression, or disinterest in handlers or owners.

Moving to a new environment will likely cause stress in your donkey. When you first acquire donkeys, you’re going to have to do some work to get to know them. If they avoid you, it’s because they don’t trust you yet and they’re anxious. You’ll have to spend time with them to build a relationship.



Figure: 3.2. Donkey response to environment

Source (https://bestfarmanimals.com/everything-you-need-to-know-about-donkey-body-language/ 3/09/2022)

- **A Donkey's Eyes**

A donkey's eyes also reflect its emotional and physical well-being. A rounded eye or an almond shape indicates a content or curious donkey. An eye with its white showing or a narrow wedge of an eye suggests a donkey is in discomfort. A glazed look in a donkey also warrants concern. Such a donkey may be depressed or in pain. An easy way to remember the signs of pain or discomfort is to think of the eye as an orbit (the actual technical term). Orbital tightening is when the orbit (roundness) of the eye is squeezed shut to some degree. The tighter the orbit, the greater indication of pain. Ironically, the opposite is true as well. The more open the orbit, the more likely the donkey is in pain as well. The whiter showing in a distressed donkey's eye, the more discomfort it is likely to experience.



Figure: 3.3; alert donkey

Source (https://bestfarmanimals.com/everything-you-need-to-know-about-donkey-body-language/ 3/09/2022

- **A Donkey's Muzzle and Nostrils**

While it is not immediately evident, even a donkey's muzzle and nostrils can indicate their comfort level. A donkey that is willing to sniff its environment and show curiosity is likely a content, healthy donkey. And a donkey who is not interested in sniffing its owner's or handler's hands may be in emotional distress.

A tense donkey will show it in the shape of its nostrils. Paisley-shaped, relaxed nostrils indicate well being, while semi-closed (almond shaped) or roundly open nostrils suggest tension and distress. A donkey that is constantly snorting at you or flaring its nostrils is likely warning you of its desire to be left alone. It might be better to give it some space for a time.

At times your donkey may look as if it is smiling. It will curl its upper lip up and stretch its neck out. While not a smile in the human sense, this action is a sign of curiosity and interest in its environment. A donkey, like many mammals and all snakes and lizards, has an organ that helps it smell located in its nasal cavity.

This donkey smile is called a **flehmen** response. The curled lip allows more of the scent particles to enter its nasal cavity so it can smell its environment better than if it were to use its nose alone. Excessive flehmen responses may also be warning signs of discomfort.

The paisley-shaped nostrils, comfortably open eyes, and interest in their handler (and her snacks!) all demonstrate well-being in these donkey

s.

Figure: 3.4. Donkey feeling flehmen response

Source (https://bestfarmanimals.com/everything-you-need-to-know-about-donkey-body-language/ 3/09/2022)

- **A Donkey's Tail**

A donkey's tail, like a dog's tail or even a goat's tail, tells about its mental and physical state. While a donkey's tail is often used as a tool to keep flies or other pests at bay, regular swishing and tail twitches also indicate well-being in a donkey. A still tail suggests depression and malaise.

A still tail is a negative sign and a swishing tail is a good sign. But, a tail that rapidly swishes could be a sign of stress or anxiety as well. If you have a high fly or mosquito load, you'll need to observe carefully to determine whether the rapidly swishing tail is anxiety or simply irritation at the pests.

- **A Donkey's Posture**

Donkeys give the silent treatment when they're disengaged or in pain. A donkey with a healthy disposition and feeling well will face its owners or handlers when they approach. A donkey that faces away from the owners and handlers demonstrates apathy or discomfort. The donkey's posture demonstrates potential health problems if the donkey has an abnormal stance or even the slightest limp. If you see your donkey standing with a slightly hunched back, lowered head and partially closed eyes, you can know your donkey is uncomfortable.

Like horses, if a donkey strikes a pose with one of its back legs cocked, it's smart to make yourself scarce. This is often accompanied by ears pinned back and an intent to kick the

offending creature. As someone who has been on the receiving end of a swift donkey kick to the thigh, I can attest that it is not a pleasant experience. Because my donkey kicked playfully I was not given the warning pose. But, playful or malicious, a donkey kick can do some damage. If a donkey is in a great state of agitation, its entire body may tremble or shake. This is not a subtle indication of anxiety and should be respected by distancing yourself from the donkey. Pawing the ground repeatedly sometimes suggests discomfort as well. Jennys about to foal will often paw the ground and then lie down and roll from side to side.



Figure 3.5. Good posture of donkey.

Source (https://bestfarmanimals.com/everything-you-need-to-know-about-donkey-body-language/ 3/09/2022)

- **A Donkey's Vocalization**

Healthy, well-adjusted donkeys like to talk. They evolved in areas with vast expanses of land that required long-distance communication, which explains why their brays are so ear-splittingly loud at times. Jacks are more likely to bray than jennys, but if a jenny finds a handsome jack and is in the mood, she will call out and let him know.

A bray is not the only sound a donkey makes. In addition, they snort, grunt, squeal, growl, and whuffle. Many of those sounds can be heard when jennys talk to their foals or play with other herd mates.

A distressed bray is distinct from the "You're late for dinner" bray that you will hear anytime you're five minutes off schedule. The distressed bray is loud and non-stop for quite some time. It may be due to a new animal on the farm or a predator nearby. It is worth your attention.

When we brought a visiting 5lb puppy on property once, our donkeys got a whiff of it and immediately let loose with a braying session that lasted a full 20 minutes without a breath. It was both humorous and awful. Our donkeys were sincerely concerned about their well-being, but the little puppy couldn't have hurt a hair on their heads.

This nervous vocalization is one of the reasons donkeys can be used as livestock guardians. It is loud enough to frighten off most predators and to alert any owners within a mile or so. A silent donkey is another warning of possible sickness or depression. This is especially true if your donkey typically is more vociferous.

Generally donkeys, like other animals, express happiness as well as pain and stress. On our farm, we call these playful moments their happy fits. Our small herd of three donkeys (a mom, her jenny, and her john) race around our property snorting, braying, and whuffling. They spin around corners, kick out in joy, and egg each other on. It is delightful to witness. While there is not room in this article to discuss how to maintain happy donkeys, watch for another article about how to assure that your farm is using the best practices to keep a happy, healthy herd of donkeys. Your donkey will thank you.

- **How do you communicate with your dog?**

Before delving into the body language of dogs and their calming signals, it is essential to know how to communicate with your dog:

- ✓ Always use a **low tone of voice** so that your pet does not confuse your words with a punishment. Also, you must remember that they have very sensitive hearing, so there is no need to raise your voice.
- ✓ Try to **match words with gestures**. This way your dog will understand you better and will be easier for them to understand you in loud environments.
- ✓ Use positive reinforcement to communicate with the dog. Various studies show that dogs learn best with this technique than with punishment methods.
- ✓ Make eye contact when communicating with them.

- ✓ Always respect your dog, especially if you see that they do not feel at ease. Change the environment, situation or use a different method of positive reinforcement to motivate them.
- ✓ Again, do not use punishments to communicate with the dog. If they do not understand you, repeat the action but never scold them.

- **Yawning**

The yawn as a calming signal is usually accompanied by other signals such as lifting the ears, and tilting their head. This behavior should not be confused with the typical yawn when dogs wake up. The signal **indicates discomfort** or confusion as to what you're asking



Figure: 3.6. dog showing **indicates discomfort**

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesses date on 3/2022

- **. Licking**

This is one of the most common calming signals. Except when they have been drinking water, dogs will lick their nose to indicate that they don't want any stress or problems. They usually do this with their head down or sideways. This means they are asking for **a break** from training or want some space from you.



Figure: 3.7. licking (calming signals)

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Licking a person**

In general, if a dog licks you, they are showing **affection.** However, if the dog licks someone who is agitated or excited this could be a **symptom of stress.** By licking that person, they are trying to relieve their stress because they know this is a welcome gesture.

If the dog licks you from nerves and not for love, you can recognize this behavior thanks to other calming signs. Signs such as lifted ears, head tilts and anxious movements.



Figure: 3.8. Person liking (affection. ,symptom of stress)

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Turning their head away**

It is likely that at times when you are trying to get closer to your dog, they can turn their head away from you. This gesture indicates discomfort and indicates that they want their space. In this case you can observe other signs like shortness of breath, lifted ears and licking their face. If they

emit this signal in front of other dogs, it may indicate that **they want to be quiet and not have any issues.**



Figure: 3.9. Turning Head away (quiet)

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Nudging your nose**

This is a very positive sign that shows the dog **seeks our attention and affection.** This behavior arises when the dog is a puppy, because it is the same gesture used when they want their mother's breasts.



Figure: 3.10. Nudging your nose (seeks our attention and affection)

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Eyes half open**

This calming signal indicates that your dog **feels safe and at ease.** It also originated when they were a puppy too, when they felt safe with their mother. This is a very positive sign.



Figure: 3.11. Eyes half open (feels safe)

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Sniffing the ground**

If your dog sniffs the ground **before approaching** another dog, you can be happy. This is a quiet signal that characterizes a polite dog that does not wish to cause problems nor have their space invaded.



Figure: 3.12. Sniffing the ground (before approaching other dogs)

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Walking in circles**

When two dogs encounter one another and begin walking in circles, they are exhibiting the **correct and polite canine greeting.**



Figure: 3.13. Walking in circles (polite canine greeting)

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Stretching**

Stretching in dogs can have several meanings:

- It is common to see a dog in this position when they are **asked to play** with another dog. In this case, the gesture shows a positive and vibrant attitude and they will often wag their tail. It shows that the dog is well trained.
- If the stretch is accompanied by other calming signals, like licking their nose, wagging their tail and tilting their head, the dog is **asking for space** and wants to be left alone.



Figure: 3.14. Stretching (asked to play**)**

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **. Remaining still and alert**

Remaining still and alert is common when you bring a dog to a new park or a new place where they do not know the other dogs. In this kind of situation they will **stay still** and let the others sniff them. It is a calming signal that shows that the dog is well trained: they quietly let the others get to know him.

Remember that if a dog stays still while you're telling them off or punishing them, they are not showing submission. They feel helpless because they don't know how to react or where to hide from you. This situation is dangerous and negative for the dog and their training. **Do not scold** your dog harshly or use violence.



Figure: 3.15. Remaining still and alert

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **. Shaking**

This sign shows that your dog is stressed and they are trying to **release their tension** through shaking. Generally this is accompanied by other calming signals or the dog will start running.



Figure: 3.16. Shaking (release their tension **/stress)**

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Lying with their belly up**

In this case, a dog will stretch showing their submission to another dog, for fear or other reasons. They are indicating **civility and kindness** and showing they don't want to have any issues with a fellow dog.

Remember that if they lie down on their back and shows no signs of submission, just peace and tranquility, they trust you. And they just want cuddles and **belly rubs!**



Figure: 3.17. Lying with their belly up (civility and kindness **)**

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Peeing**

If a dog pees, they are marking their territory. But, if they do this alongside other dogs, they are **getting to know each other**. A dog's sense of smell is highly developed and one of the ways in which these animals are able to know what surrounds them.



Figure: 3.18. Peeing (getting to know each other)

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Position of fear or aggression**

It is very important to recognize the signs of fear in dogs because they help us to interpret their emotions and behave in an appropriate manner. Refer to the image below to see the positions that show fear in dogs.

1. In Figure 1, the dog has **a lot of fear.** They have their tail between their legs, they are licking, they have their ears lifted and they have a curved body.
2. Also in Figure 2 shows the afraid dog is **on the defensive.** They areshowing their teeth, have stiffened limbs and their hair is bristled. We must be careful because a dog that shows aggressive-defensive behavior can react suddenly and in an exaggerated way. They may harm you. This happens especially when the dog feels surrounded or endangered. In such situations, moreover, the dog may bark or incessantly growl, cry and moan.

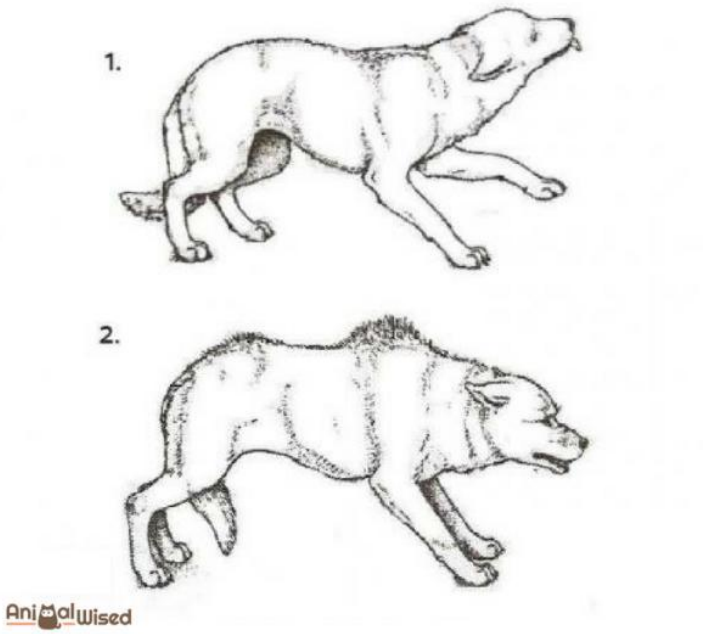


Figure: 3.20. (1) fear, (2) aggression

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Position of defense and offensive aggression**

Now we'll show you the positions of a confident dog, very different from the former image.

1. In Figure 1, the dog is **confident**, steady and quiet. They have a relaxed tail, relaxed ears and their posture does not indicate fear.
2. In Figure 2, however, you can see the typical posture of a dog with **offensive aggression.** In this way, the dog tries to ward off other animals, people or annoying objects. They have bristled hair, a curled nose, stiff legs and are showing their teeth. Usually they have a raised tail, and can bark briefly with a high-pitched tone that expresses annoyance or frustration at the situation.

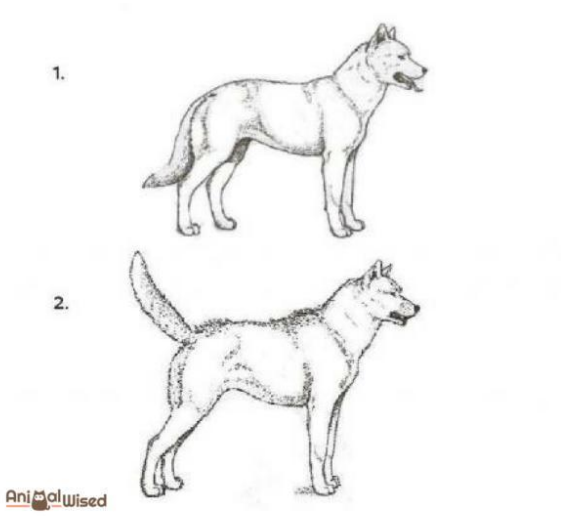


Figure: 3.21. Position of defense and offensive aggression

Source https://www.akc.org/expert-advice/advice/how-to-read-dog-body-language/ accesse date on 3/2022

- **Compulsive behaviors**

Repeated movements with no purpose are usually a mechanism to relieve stress in a certain situation. They are repetitive, prolonged and can cause you to be agitated. If left untreated, the condition tends to become chronic and more difficult to eliminate. It can be caused by a disease, a behavioral problem or both. An example of a stereotype in dogs is to see them chasing their tail compulsively.

- **Other calming signals**

Importantly, there are a number of calming signals in dogs, which sometimes we can struggle to identify. Here they all are:

- Raising one of their front legs
- Raising one of their hind legs
- Looking at you with one eye
- Lying down
- Hunched or curved body
- Lifting their ears
- Nudging you
- "Smiling"
- Slight tail movements
- Looking at the ground
- Moving away
- Turning their head
- A relaxed mouth / mouth slightly ope

- **Sheep:**
  - ✓ **Vision:** Sheep vision is a dominant source of information about the social environment. .
    - Sheep can recognize photographs of familiar sheep and people, but a photograph of a familiar stock person is not as effective as the stock person himself in calming an isolated lamb
  - ✓ **Vocalization:** Sheep are also responsive to the vocal sounds produced by other animals. The vocalization in lambs is high.
    - During water deprivation, the incidence of "baaing" is correlated positively with the number of hours since water was removed.
    - The lamb will also vocalize, on occasion, if frightened or injured.
    - Adult sheep continue to use vocalizations as contact calls. Sheep also are able to distinguish conspecifics by means of olfaction..
  - ✓ **Olfactory** and gustatory events function as cues for sheep, Females adopt the young of others through transfer of o*dor*. Smearing the Calf/Lamb with Amniotic Flui
  - ✓ **Communication with humans**

    Sheep are aware of human visual activity. They look at a staring human more than a non-staring human and they are more active and urinate more often
- **Goats**
  - ✓ are frequently kept as pets and, like dogs, can annoy neighbors with their separation vocalizations. Analyzing the problem, as one would for a barking problem, may prevent de-bleating. Providing a companion goat often helps, as does ignoring the vocalization.
  - ✓ Goats have pedal glands on only two feet and a tail gland. Aspiration of Nonvolatile material into the vomeronasal organ has been demonstrated in goats. They stamp and produce high-pitched sneeze when threatened. Kids have a distresscall and an isolation bleat
- **Communication and Body Language of Bovine (Cattle)**
  - ✓ Cattle posture indicates alertness, aggression, and submission. A subtle sign, the showing of the whites of the eyes, (>15% of the eye) can be elicited even by mild frustration such as visible but unreachable food or by social frustration such as removal of the cow's calf or anticipation of food. Treatment with diazepam several hours before the frustrated experience decreases the percent of visible of eye white.

- ✓ **Vocalizations**.

The **"moo"** is low pitched. The other common vocalization the call, hoot, or roar is higher pitched and consists of repeated brief calls, usually by a distressed cow. A threatening bull gives a **roar** of high amplitude. A very hungry calf will give a high-intensity "**menh"** call. During copulation, grunting sounds are heard. Some humans can recognize cows by voice, so it would not be surprising if cattle were able to recognize one another.

Cattle appear to respond to a vocalization with a vocalization of similar intensity. An excited call is answered by excited calls. Calves have a special moo, almost a **baa,** or play call. Vocal communication in a prey species such as cattle may be most important in transmitting information about general safety or danger. It may have been more important for cattle (and horses) to be alert and ready to flee than to communicate more precise information in their calls. If domestic animal communication is studied in as great a depth and with the same ingenuity as bird communication has been studied, vocal communication may be found to be more precise in domestic animals. Careful analysis of the situation in which as all is given, recording of the call, and playback of the call to conspecifics in a naturalistic setting may help to break the code of domestic animal languages.

- ✓ **Visual signals**

Cattle can discriminate a photo of a cow from that of other ruminant species. They are also capable of depth perception and have a fear of heights that can be demonstrated when they are first exposed to a milking pit

- ✓ **Olfactory signals**

Olfactory communication is very important for sexual activity in ruminants. Goats and cattle can distinguish conspecifics by means of urine. Male urine is more easily distinguished than is female urine. The flehmen response is shown by all male ruminants in response to female urine.

- **Camels**
  - ✓ Behavior notes
    - Domestic camels are maintained in a semi-wild state. Obtain food from wild vegetation, water from humans.Unguarded camels will return to a familiar well.
    - Wild camels extremely shy Acute eyesight allows them to spot danger 2-3 miles away and flee
  - ✓ Activity Cycle
    - Browse or graze 6-8 hours and chew cud another 6-8 hours each day.
    - Constant work required to maintain health on low-nutrient desert plant life.
    - Previously, migrated seasonally to green pastures.
    - Movements now curtailed by human settlements.
  - ✓ Social Behavior
    - Social groups
      - Form small groups of ~6 (2-15 animals).
      - Gather at oases and small springs.
  - ✓ Communication
    - Displays
      - Rutting male stretches to hold head higher than a rival.
    - Vocalizations
      - Rutting cry: “blo-blo-blo"
    - Smell and scent marking
      - Male rubs back of head against shoulders (occipital gland).
      - Secretions tend to excite males.
  - ✓ Agonistic Behavior and Defense
    - Aggression
      - Dromedaries may blow out (spit) cud when excited.
      - Bactrian camels do not deliberately spit (may if abused).
      - Little aggressive behavior except among males during breeding season.
      - Adults may push with lowered head and neck.

- Canine teeth used as weapons.
- Extreme fights can result in death of both combatants.

✓ Interspecies Interactions

- With domestic species
  - Integral part of nomad culture
  - Domesticated by nomads 3,000-4,000 years ago
  - till important part of nomad life in the Sahara
    - Provide meat, milk, hides, wool
    - Males used for transport and riding
- Used in combat

- **Swine**

✓ **Vocalizations**

Vocal signals are probably the most important means of communication in pigs.

- Grunt, bark, and squeal: The common grunt is given inresponse to familiar sounds or while a pig is rooting. Thestaccato grunt or short grunt and is given by an excited or investigatingpig and may precede a squeal. A crescendo of staccato gruntsis given, for example, by a threatening sow and may precedean attack on anyone who disturbs her litter.Isolation in a strange place causes pigs to vocalize. Short grunts are followed by screams.

✓ **Visual signals**

- Posture: visual signals do not appear to be as important. One can learn something about pig thermoregulatory problems, if not about their moods, by observing their posture. Pigs have compensated for their poor physiological abilities with several behavioral strategies to reduce heat loss. A warm piglet lies sprawled out, but a coldone crouches with its legs folded against the body.

✓ **Tail position**

The tail, particularly in piglets, is a good index of general well-being in most breeds. Although Vietnamese mini pigs do not curl their tails, a tightly curled tail indicates a healthy pig in most breeds, and a straight one indicates some sort of distress. The pig's tail is elevated and curled when greeting, when competing for food or chasing other pigs, and during courting, mounting, and intromission. The

tail straightens when the pig is asleep or dozing, but curls again when the pig rouses unless the animal is isolated, ill, or frightened. The tail will twitch when the skin is being irritated.

✓ **Group behavior**

Group behavior is even more important. Pigs, especially newborn pigs, huddle when they are cold. They therebyconvert several small bodies into one large one, bothdecreasing their surface area and using one another forinsulation. Pigs can select an optimal temperature when agradient is present, both in the laboratory and on the farm.

✓ **Olfactory signals**

- Boars may use behavioral signs more than pheromones todetermine the sexual receptivity of the sow.Boars are theonly male ungulates that do not exhibit flehmen.Instead, theygape as a cat does when they encounter sow urine.Femalescan identify intact males, probably by the strong boar odorproduced by the androgen metabolites present in both thesaliva and preputial secretions of boars.Olfactory stimuli serve to identify pigs individually, for pigscan distinguish conspecifics by means of odorincludingurine odor.Olfaction appeared to be the most important sense in individual recognition.Pigs investigate any newcomer or any pig that has been temporarily removed by nosing it.

- **Wild animals**

✓ **Animal Language**

- Animal communication is the area where some of the most dramatic findings have been made in the field of animal research. Communication patterns that were previously unknown have been discovered due to the advance in research technology**.**



Fig.3.22 wild animal Animal talk Language

Source *(https://www.botswana.co.za/Botswana_Wildlife_Behaviour-travel/senses-hearing.html)*

- ✓ **Animal Senses**
  - Mammals are the only animals with external ears or pinnae. To call them ears is a little misleading as the main part of the ear is internal and the pinnae are merely a receptor to pick up the sounds that are then sent to the inner ear for processing.



- ✓ Animal Survival Techniques to Avoiding Danger
  - The African wilderness is a dangerous place for those with limited survival skills, and as such the animals that live there have all developed their own survival techniques for avoiding danger.



Figure 3.24. Wild live survival

- All species have methods of communicating with their own species either by vocal or non-vocal means but the debate sometimes occurs as to whether species can communicate with other species.



wildlife photography ...
susankmcconnell.com



Figure: 3.25. Wild life communication

Source ;(http://www.susankmcconnell.com/2015/03/20/emotional-images-capturing-and-conveying-feeling-in-wildlife-photography/ accesse date on 3/09/2022)

- ✓ **Do Wild Animals Have Emotions**
  - Many people like to attach a romantic element to animal behavior. Elephants are said to mourn over a dead member of their species. It is true that they will touch and scent a carcass - and even old bones.



What Kind of Emotions Do Animals Feel?
greatergood.berkeley.edu



Prove Animals Feel Same Emotions ...

Figure: 3.26. Wild Animals Have Emotions

Source;(https://greatergood.berkeley.edu/article/item/what_kind_of_emotions_do_animals_feel acessed date on 3/9/2022)

https://www.worldanimalprotection.org/sites/default/files/media/M18_LN_Welfare_of_Working_Animals.pdf

3.2. Identifying temperament, traits, health and wellbeing of animal

Temperament is assumed to be multidimensional, and due to the complexity of behavioural traits there is no single objective measurement that is able to capture all behavioural characteristics. Furthermore, it discussed that them asking of unfavorable behavioural traits like nervousness, flightiness or excitability by adaption to the human-created environment of livestock production hinders the selection for behavioural traits like temperament. One possibility for over-coming these problems is the analysis of the genetic back-ground of cattle behaviour, which could contribute to the successful integration of temperament in breeding programs by the use of temperament associated markers (marker-assisted selection or genomic selection) and further help to evaluate the correlation between temperament and performance.

Temperament: a person's or animal's nature, especially as it permanently affects their behaviour. he characteristic phenomena of an individual's emotional nature, including his susceptibility to emotional stimulation, his customary strength and speed of response, the quality of his prevailing mood, and all peculiarities of fluctuation and intensity of mood; these phenomena being regarded as dependent on constitutional makeup and therefore largely hereditary in origin.

As a consequence of the adaption and selection for different production and housing systems, a large variability in temperament exists today in farm animals, resulting from differences in reactions towards human contact and new surroundings. Fear is considered one of the main psychological factors underlying temperament traits in general, and in particular, fear of humans affects the human–animal relationship consider-ably. Just as the production system promotes certain behavioural characteristics, animal-specific temperament can likewise affect relevant parameters in livestock production.

A breeding goal should include the following aspects: increased income (higher production of milk/beef); reduced costs (better fertility, fewer diseases, reduced culling rates); ease of management (temperament, milking speed); and advantages regarding the sale of products (animal welfare, ethics, consumer concerns).Complex breeding goals also require information on a wide range of relevant traits that can be measured economically.

A character (or trait) can be considered as a characteristic of an organism shared by all or some of the individuals of a species that can vary, although not necessarily, among these individuals (we consider character and trait as synonyms; on the diversity of the character concept). Measured individual values for that character are called phenotypes. We divide temperament traits into five categories:

- **Shyness-boldness-** an individual's reaction to any risky situation, but not new situations such as predators and humans.
- **Exploration-avoidance,** an individual's reaction to a new situation. This includes behaviour towards a new habitat, new food, or novel objects

- **Activity,** the general level of activity of an individual- Activity can interfere with the measurement of exploration or of boldness; it has thus been proposed to obtain a measure of activity in a non-risky and a non-novel environment.
- **Aggressiveness,** an individual's agonistic reaction to wards conspecifics;
  When animals become stressed, bored, or sick, they may perform 'abnormal behaviors' such as biting, hiding, or pacing. There for the following stimulus response of animal behavior will discuss the normal and abnormal animal traits in comparison.

✓ **Fight or flight:**

When stranger approaches an animal, the same basic principles apply whether it is domestic or wild animal. Each animal has a fight or flight distance. When a space is invaded the animal goes into a state of alert. Further encroachment into animal's space will lead to action that may take the form of avoidance (the cow or horse crash through fence, the dog runs off down the road) or aggression (the dog bites, the cow runs over the stranger). This action is aptly termed as fight or flight response. When this happens it is very difficult to come up with a good restraint plan.

✓ **Aggressive behavior:**

Aggressive behavior is a form of agonistic or conflict behavior that lead to and induces fighting. Aggression is not the result of a single cause. The different forms of aggression are classified according to the stimuli or circumstances giving rise to the ferocity.

✓ **Irritable or pain induced aggression:**

Injections and certain manipulations, such as treatment of wounds, cause pain and discomfort that the animal may resent. If the animal is initially apprehensive and nervous, the probability of aggression is very high.

✓ **Maternal aggression**

All female domestic animals that are suckling their young are sensitized to interference with their offspring by strangers. The calmest, old brood mare in the herd may be extremely protective of her new foal. The bitch can be aggressive with strangers and even family members she perceives a threat to her pups. A sow within earshot of her piglets when they are being restrained can become one of the most dangerous animals encountered.

✓ **Predatory aggression:**

Aggressive activity displayed by chasing and killing prey is observed in predatory domestic animals. Such as the dog and cat, is called predatory aggression. This from of aggression does

not poses a threat to the animal handler, although large dogs may pull the handler down if they fill the urge to chase a cat while on leash.

- ✓ **Territorial aggression:**

All domestic animals have a degree of territorial domain. They will protect the area over which the range from intruders, and they may, in fact, exhibit territorial aggression. Separate groups of horses may share feeding sites and watering holes, but they remain apart from one another and retain control of their own separate home range. The domestic dog regards the yard as its territory or the territory of its pack (the dog's human family). Strangers are treated with suspicion, and this suspicion may lead to barking or attack. Dogs that harass the mail carrier or meter reader are behaving within the norm of canine behavior.

- ✓ **Inter male aggression:**

Aggression occurring between males can be a problem, particularly when stud animals are being kept. Boars can be extremely vicious when confronting each other, and great care should be taken when handling them. Stallions can become extremely agitated when mixed with another stallion. Bulls spend a great deal of time head butting and pushing one another around to establish the dominance order when they are turned out together.

- ✓ **Dominance aggression:**

Certain dogs will establish their authority over a human family, other animals, and strangers because of their heritage as pack animals. Alternatively, a dog may accede to dominance from one family member but attempt to assert itself aggressively with other family members. Such animals are a menace in the clinic, since they will not only fear bite but also attack. Persuasion is of little value in handling these dogs. This type of animal is dangerous, and reliable restraint must be used at all times when handling it.

- **Sociability,** an individual's reaction to the presence or absence of conspecifics (excluding aggressive behaviour). When animals becomes playing or grooming, it indicates normal behaviors tell us that an animal is happy, healthy, and relaxed in its environment.

NB. Last two trait categories are expressed in a social context;

Animal wellbeing: An animal's present state with regard to its relationship with all aspects of its environment, both internal and external. It implies a positive mental state, successful biological

function, positive experiences and freedom from adverse conditions. Animal wellbeing relates to evidence of how an animal is coping with a given situation and a judgment as to how the animal feels in these circumstances.

Assessment of wellbeing involves using a combination of behavioural and physiological measures that indicate:

- ✓ The animal's health status
- ✓ Evidence of species-specific behaviors
- ✓ The status of the key indicators of the physiological and behavioural responses to a stress. Animal behaviour is an important indicator of how an animal is interacting with its environment: changes in patterns of behaviour are often the first pointer as to how an animal is responding to and coping with change. Animal behaviour can be assessed by observation and during interactions with the researcher or animal carers.

3.2.1. The essential animal wellbeing issues to consider

- **Using feed and water as rewards after restriction:**

Controlling the delivery of feed or fluids can influence the behaviour of a wide variety of animals. Food or fluid can be used as a reward, even in well-fed (satiated) animals. Food or water restriction is usually achieved by limiting the daily quantity available to the animal, or limiting the animal's daily period of access. This will cause the animal to experience hunger and thirst. If the restriction is prolonged, the animal may become dehydrated or lose bodyweight.

- **Using aversive stimuli or punishment to motivate behaviour:**

Aversive stimuli or punishment cause animals to experience fear, distress, anxiety or pain. The basic behavioural and physiological (fear and stress) responses are minimized if the animal is able to control the aversive stimulus. Situations in which animals cannot influence or control the aversive experience are particularly distressing to them. Fear and stress behavioural responses include:

- ✓ escape (eg stopping contact with an aversive stimulus, such as an electrified cage floor)
- ✓ avoidance (a learnt behaviour that prevents an aversive encounter, such as not stepping on an electrified floor, or pressing a lever that turns off the electric shock)

- ✓ decreases in grooming, food intake, level of activity, exploration, sexual activity, mothering behaviour and loss of bodyweight
- ✓ Increases in 'freezing' behaviour. These response behaviors are species typical or 'hard wired', but the aversive stimuli that evoke them are learned. Severe negative or aversive sensory stimuli must not be used, and painful or noxious stimuli should be avoided. If their use is necessary, the level and duration of the stimulus must be minimized, and escape from the stimulus must be available.

- **Social behaviour**: Social grouping has both potential beneficial and adverse behavioural and physiological effects:
  - ✓ The positive effects of social grouping include grooming and parenting, social attachment (bonding), and promotion of infant development. Stimulating the brain with sensory inputs affects the growth and interconnectedness of the brain, thereby affecting function. Social deprivation can result in stunted growth
  - ✓ Negative effects include aggression, fighting, and immunological and cardiovascular changes and depression induced by social stress. In many cases, the negative effects on subordinate animals in social-dominance hierarchies subside over time. However, if food or water is restricted, subordinate animals may continue to be adversely affected.

3.3.Assess Physical and Social Environment of animal

A. Physical environment:

Micro-environment and Macro-environment

The microenvironment of an animal is the physical environment immediately surrounding it the primary enclosure with its own temperature, humidity, and gaseous and particulate composition of the air. The physical environment of the secondary enclosure such as a room, a barn, or an outdoor habitat constitutes the microenvironment

- **Housing:** *Primary enclosures*- Acceptable primary enclosures may include:
- ✓ Allow for the normal physiologic and behavioral needs of the animals, including urination and defecation, maintenance of body temperature, normal movement and postural adjustments, and, where indicated, reproduction.
- ✓ Allow adequate ventilation.

- ✓ Allow the animal's access to food and water and permit easy filling, refilling, changing, servicing, and cleaning of food and water utensils.

Housing Systems should have special caging and ventilation equipment, including filter-top cages, ventilated cages, isolators, and cubicles in order to minimize the spread of airborne disease agents between cages or groups of cages.They often require different husbandry practices, such as alterations in the frequency of bedding change, the use of aseptic handling techniques, and specialized cleaning, disinfecting, or sterilization regimens to prevent microbial transmission by other than the airborne route.

- **Ventilation**

The purposes of ventilation are to supply adequate oxygen; remove thermal loads caused by animal respiration, lights, and equipment; dilute gaseous and particulate contaminants; adjust the moisture content of room air.

B. Social Environment:

Consideration should be given to an animal's social needs. The social environment usually involves physical contact and communication among members of the same species (conspecifics), although it can include noncontact communication among individuals through visual, auditory, and olfactory signals. When it is appropriate and compatible with the protocol, social animals should be housed in physical contact with conspecifics. For example, grouping of social primates or canids is often beneficial to them if groups comprise compatible individuals.

3.4.. Follow policies, procedures and legislative

A policy is a course of action or guidelines to be followed whereas a procedure is the 'nitty gritty' of the policy, outlining what has to be done to implement the policy.

All organizations should have written policy and procedures, and staff training in the following areas:

- a confidentiality policy
- a clearly defined process for identifying and regularly updating a Community Resource Index so that all workers are aware of what other services are available to refer to (the index contains basis contact details and information about what each service provides)

- processes for networking with other agencies, including attending relevant interagencies (meetings of local service providers)
- guidelines for case conferencing (this will be discussed in more detail a bit later)
- referral protocols, including how referrals should be made, the kind of information that can be shared with other services and any ongoing roles and responsibilities of each service with regard to the client
- A policy for how long client information is kept after clients are no longer involved with the service. For example, different government departments produce documents that outline legal requirements for their staff in relation to storing and maintaining information.

Policies and procedures are an essential part of any organization. Together, policies and procedures provide a roadmap for day-to-day operations. They ensure compliance with laws and regulations, give guidance for decision-making, and streamline internal processes. Following policies and procedures is good for employees and your organization as a whole.

3.4.1. The Importance of Following Policies and Procedures:

As your organization's leaders create and enforce policies, it's important to make sure your staff understands why following policies and procedures are critical.

Here are just a few of the positive outcomes of following policies and procedures:

- **Consistent processes and structures**

Policies and procedures keep operations from devolving into complete chaos. When everyone is following policies and procedures, your organization can run smoothly. Management structures and teams operate as they're meant to. And mistakes and hiccups in processes can be quickly identified and addressed.

When your staff is following policies and procedures, your organization will use time and resources more efficiently. You'll be able to grow and achieve your goals as an organization.

Consistency in practices is also right for employees individually. They know what they're responsible for, what's expected of them, and what they can expect from their supervisors and co-workers. This frees them up to do their jobs with confidence and excellence.

- **Better quality service**

When employees follow procedures, they perform tasks correctly and provide consistent customer service.

- **A safer workplace**

When your staff is following policies and procedures, workplace accidents and incidents are less likely to occur

3.5. Referring and Taking legal response to animal behaviour

Statutory response in animal welfare include:-detail procedural requirements and explain timelines for outcomes; issue caution or infringement notice; recommend action plan; and seize animal.

The following elements and examples are essential components of statutory responses and action plans to reduce animal behavior related beheviour:

- **Personnel Training:**
  - ✓ Training will provide personnel with clear definitions and descriptions of their duties and the hazards associated with those duties (such as zoonosis, chemical hazards, physical hazards like radiation and allergies, handling waste materials)
  - ✓ Training will provide personnel with information about levels of risk associated with working with animals and personal health conditions (**e.g., special precautions to avoid hazards for pregnant women or persons with chronic diseases, etc.**)
  - ✓ Make certain that personnel are proficient in implementing safety precautions
  - ✓ Departments are responsible for maintaining their department specific training records
- **Hazard and Risk Assessment**
  - ✓ identifies hazardous biological, chemical, or physical agents
  - ✓ identifies potential hazards that are inherent to animal work, such as animal bites, chemical cleaning agents, allergens, or zoonosis
  - ✓ Assesses extent and level of participation in occupational health and safety training program on the hazards posed by the animals and materials used; the exposure intensity, duration, or frequency; the susceptibility of the personnel; and the history of occupational illness or injury in the particular workplace

- ✓ PI or supervisor completes the Hazard and Risk Assessment for those who have substantial contact with animals, provides a copy to the individuals and sends copy to the Safety Office

- **Personal Hygiene**
  - ✓ Set high standards for personnel cleanliness and hygiene
  - ✓ Require suitable clothing, gloves, masks, head covers, coats, coveralls, shoe covers, etc.
  - ✓ Require hand-washing and changing clothes where necessary
  - ✓ Make certain that all laboratory personnel, including service and custodial staff and visitors, understand the chemical and biological dangers associated with the lab or facility
  - ✓ Affix biohazard signs on doors outside laboratories where bio-hazardous material is handled or stored (available from the University Police and Safety Office). The protocol to be followed in case of a spill of the bio-hazardous materials should be posted in a visible location in the laboratory or facility

- **Restrict laboratory or facility access and keep doors locked when unattended**
  - ✓ Keep the facility clean and free of clutter. Make certain that emergency safety devices (fire extinguishers, eye washes, etc.) are easily accessible and in working order
  - ✓ Make certain that all personnel, students and visitors wear protective clothing such as lab coats, gloves and safety glasses. Remove lab coats or gowns before leaving the laboratory or facility
  - ✓ Do not eat, drink, smoke, store food and food utensils, apply cosmetics or lip balm, or insert or remove contact lenses while in the facility or laboratory
  - ✓ Restrain long hair. Avoid wearing loose clothing or jewelry, shorts, open-toed shoes or sandals.
  - ✓ Carry out procedures so as to minimize risks of splashes, spills, and generation of aerosols
  - ✓ Pipetting by mouth is not allowed
  - ✓ Use hypodermic needles only when absolutely necessary. Do not bend, break, shear or recap used needles. Use the appropriate sharps containers
  - ✓ Use a two-person team to inoculate animals when appropriate

- ✓ Wash hands after handling infectious material and before leaving the laboratory
- ✓ Decontaminate all contaminated materials before disposal or reuse
- ✓ Decontaminate laboratory surfaces following any spill of biohazardous materials and at the end of each workday.
- ✓ Report all spills, accidents, and incidents immediately (as required by the NDSU Safety and Risk Management Program 24 hour reporting requirement)

- **Facilities, Procedures, and Monitoring**
  - ✓ Maintain cleanliness of facilities and supplies
  - ✓ Consider ergonomics and request for assessments
  - ✓ Inspect, maintain, and repair equipment
  - ✓ Dispose of contaminated bedding properly

- **Animal Experimentation involving Hazards**
  - ✓ PI's, departments and supervisors must maintain up-to-date written policies governing experimentation with hazardous biological, chemical, physical agents
  - ✓ Individuals must use recommended practices and procedures, and facility requirements for working with hazardous biological agents and materials
  - ✓ Individuals must use special facilities and safety equipment as recommended
  - ✓ Individuals must dispose of hazardous or contaminated waste properly Personal Protection
  - ✓ Obtain required clothing, shoes, shoe covers, gloves, arm protectors, masks, face shields, hearing protection, respirators, etc. from your supervisors

- **Medical Evaluation and Preventive Medicine for Personnel*:***
  - ✓ Comply with required medical evaluations for high risk positions and those with substantial contact with animals
  - ✓ Comply with required immunizations, and vaccinations for particular individuals
  - ✓ Inform personnel how to report accidents, injuries, illnesses, exposures and property damage

Self-Check – 3	Written test

Name…… ID…… Date…….

Directions: Answer all the questions listed below.

Test I: Short Answer Questions each has 2 point)

1. What is a body language means?
2. Can wild animals communicate each other? How?
3. Write at at list 3 sign (body language) show by donkey with its expression
4. What are statutory responses to reduce animal behavior related risks? (5points)

Test II: Multiple choices (each has 1 point)

1. Among the following which one is not used for effective communication

   A, visual C, Audio (vocal)

   B, pheromone D, kiking

2. Which one is the not is not a communication sign of dog

   A, Licking of person C, Opening of one eye

   B, Sniffing D, Roaring

3. Which one is represented when animals reaction to any risky condition like observing predator.

   A, Shyness C, Aggressive

   B, exploration D, Activity

4. In assessing the physical environment of animals, which one is a parts of micro-environment?

   A, temperature C, Room

   B, Barn D, Outdoor space

5. Why is important to have policy and procedure in organization

   A, To run the organization smoothly C, To provide better quality service

   B, To maintain safe work place D, To increase unsatisfied custom

Note: **Satisfactory rating – 9 points Unsatisfactory - below 89points**

You can ask you teacher for the copy of the correct answers.

Reference Materials

Books and journals

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The experts who developed the learning guide

No	Name	Qualification	Educational background	Region	Phone number	E-mail
1	Dr.Sileshi Aregahagn	DVM, MSc	Veterinary Medicine	Amhara	0920480599	kochasile@gmail.com
2	Dr. Chemere Ayenew	DVM, MSc Candidate	Veterinary Medicine	Alage	0913628734	chemereaz@gmail.com
3	Dr. Addisu Bedashu	DVM, MSc	Veterinary Medicine	Oromia	0910281160	addisubedashu@gmail.com
4	Dr. Degu Fitehanegest	DVM, MSc	Veterinary Medicine	Alage	0910525106	degufe@gmail.com
5	**Dr.Dirshaye Kebede**	**DVM, MSc Candidate**	**Veterinary Medicine**	Alage	**0916497739**	**dirshaye.kebede@yahoo.com**
6	Mr. Amsalu Bedasso	MSc	RDAE	Alage	0911353949	Amsalub5@gmail.com
7	Mr. Derebe Zelasta	BVSc, MSc Candidate	Animal health	Alage	0982253307	Derebetesema08@gmail.com