Animal Production

Level II

Learning Guide # 23

Unit of Competence: Assist Basic Husbandry Practices of Draft Animals

Module Title: Assist Basic Husbandry Practices of Draft Animals

LG Code: AGR APR2 M15 0919 LO1- 51

TTLM Code: AGR APR2 TTLM 0919V1

LO4: Clean and maintain stable gear and surrounding areas

Instruction Sheet	Learning Guide # 23

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

- Maintaining or repairing Working gear
- Cleaning, storing and polishing working Gear and Applying oils or preservatives
- checking for condition, health and soundness of draft animals
- Inspecting and removing Manure, stale feed and soiled bedding
- Cleaning stables and surrounding areas
- Reporting Buildings or fixtures that are in need of maintenance

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Maintain or repair Working gear
- Clean, store and polish Working gear and apply oils or preservatives
- check for condition, health and soundness of draft animals
- Inspect and remove Manure, stale feed and soiled bedding
- Clean stables and surrounding areas
- Report Buildings or fixtures that are in need of maintenance

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 7.
3. Read the information written in the “Information Sheets 1,2,3,4,5 and 6 in page 1,5,7,13,15 and 19 respectively”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks ” in page 4, 6,12, 14, 18 and 20 respectively.

5. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering all Self-check).
6. If you earned a satisfactory evaluation proceed to “next Information Sheet”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #23
7. Submit your accomplished Self-check. This will form part of your training portfolio.

Information sheet – 1	Maintaining or repairing Working gear

1.1. Maintenance of farming equipment

Equipment for arable farming needs regular maintenance to ensure long-lasting and reliable functioning.

For power sources, the following routines are recommended for proper maintenance.

Daily maintenance and inspections

- Scrape off the soil while still in the field.
- When returned to the farm, thoroughly clean the implement, so that a detailed inspection can be made of all parts.
- Check the tightness of all nuts and bolts with the correct spanner; never use a wrench or pair of pliers.
- Make sure that bolts and nuts used for field adjustments can be turned freely; oil them if necessary.
- Check the condition of the wearing parts and plan to replace them whenever necessary or advised.
- Check the implement for distortion. Redress any bent parts or send them for repair.
- Maintain working parts in a polished condition to stop the onset of

Rust and to reduce unnecessarily high draft forces when the implement is returned to work. Wipe all working surfaces with a rag Soaked in oil.

Rains or the delayed onset of rains may halt tillage or cultivation for several days. Such a period of rest allows for completing repairs.

Maintenance of equipment's at the end of the work

Follow the normal daily maintenance schedule. This will allow identification of all worn parts and damaged nuts and bolts. Take advantage of the end of the season to carry out a general over haul:

- Completely dismantle the main components of the implement.

- Repair or replace the parts as required.
- Clean the components thoroughly, remove any rust and if necessary, repaint them. Alternatively, protect them by wiping them with an oil-soaked rag.
- Do not paint, however, the working surfaces. These should just be wiped with oil.
- Replace all damaged nuts and bolts, again wiping them with oil on assembly.
- Reassemble the implement and make sure it has all been wiped with oil.
- Store it in a safe, dry place and away from animals, sacks of grain and any stored fertilizer.

Maintenance and Repair

PPE and devices wear out—sometimes quickly, because of irreparable accidental damage, or gradually, through normal use over time. Excessive use and wear of PPE in extreme conditions can result in premature failure. Sometimes PPE can fail catastrophically, resulting in the injury or death of the wearer. To avoid such risks to personnel, all PPE and devices must be kept in top condition.

Maintenance of the Harness

The Harness is made of wood. Wood is easily destroyed by water. A harness that is stored in a dry place like the cowshed can stay for 10 years. If you expose your harness to rain and sun, it will rot and break after 1 year. Proper storage of your harness will save you money.

1.2. ANIMAL-DRAWN CARTS

Animal-drawn carts can be made by local craftsmen from wood and material obtained from scrapped motor vehicles. Two-wheeled carts are pulled by two to four animals. Four-wheeled wagons are pulled by two to eight animals and they can be used to transport heavier loads.

- ✓ Sledges drawn by two to eight animals are cheap and brake more easily in hilly country, but they are hard to pull and carry only light loads. They cause damage to the veld if hauled off-road.
- ✓ When harnessing two donkeys to a two-wheeled cart, it is recommended that the draught-pole be made light and the load centre of gravity be positioned over

the two wheels to ensure a minimum of upward or downward force on the necks of the donkeys.

- ✓ In cart design it is important to keep the weight of the cart low. This ensures a reasonable pay load and further that in the case of two-wheeled carts, the load centre of gravity is positioned over the wheels so as to reduce the downward or upward forces on the necks of the donkeys.

Self-Check-1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write the daily activities to maintain working gear.(3pts)

Note: Satisfactory rating – 3 points unsatisfactory rating –below 3 points

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

Answer Sheet

Score: _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions:

1._____

2._____

Information sheet – 2	Cleaning, storing and polishing working Gear and applying oils or preservatives

Gear refers to any equipment, material or tools which we will use while manipulating different tasks concerning with farm. These equipment, material or tools might include harness, saddles, ropes, reins, breastplates, martingales, bridles, cruppers, saddlebags, headstalls, saddlecloths, feeders, leads and rugs.

Check gear regularly for wear and damage

Before starting work with draught animal all gears must be checked for their normal functioning and if there is any problem on the working gear it have to be renovated or avoided from the farm because damaged gear will cause illness or injury to our draught animal.

Clean and polish Gear thoroughly and applying oils after use

After use, the regardless of the material, the harness should be cleaned to remove sweat, dust and dirt. This should be done with a stiff brush followed by a cloth and water. Soaking a harness in water can make it stiff and rough so it should be washed using a wet brush and/or a wet cloth, not soaked. Warm water gets rid of sweat and dirt more easily than cold water. The bit should be washed to keep it clean. If a leather harness is used, which is relatively expensive, care should take to ensure that it lasts longer. The harness should therefore be kept soft and oiled regularly. The use of animal fat to soften the harness is one of the traditional methods used by horse, mule and donkey owners. Clean cooking oil can be used if animal fat is not available. Harnesses should be cleaned and checked for worn-out parts regularly, preferably each day following use. When not on the animals, the harness should be stored on a hook (away from rodents or dogs) in a dry, clean and safe place.

Self-Check-2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What you use for softening harnessing equipments.

Note: Satisfactory rating – 4 points unsatisfactory rating –below 4 points

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

Answer Sheet

Score:_____

Rating:_____

Name: _____ Date: _____

Short Answer Questions:

1._____

Information sheet – 3	checking for condition, health and soundness of draft animals

3.1. Identifying normal and abnormal animals

Draught animals may suffer due to a lack of adequate field-based veterinary services. Organized "barefoot" veterinary services should be introduced, as in the People's Republic of China. It may be possible to upgrade the field skills of Para-veterinary personnel through suitable incentives. Veterinary services in some countries tend to be oriented towards pets, dairy animals and race horses. Thus, the genuine requirements of draught animals in rural and urban areas are not met. Since farmers are widely dispersed, mobile veterinary services should be strengthened in rural areas.

Any increase in numbers of livestock in a locality inevitably increases possibility of significant disease and animal health problems. Preventive program is the least expensive and most effective type of program for animal health control, and this requires the intervention of government in providing veterinary health services. Preventive health care avoids diseases. Preventive health care is the key for successful draft animal keeping.

Preventive Health Care includes:

- Rational working technique
- Sufficient feed and water
- Good housing
- Spraying of the animal
- Deworm of the animal
- Vaccination of animal

To distinguish between normal and abnormal, the farmer must know the normal condition of his animal.

Health animal;

- eyes must be bright, clear and clean
- muzzle must always be cool and wet
- ears must be upright and clean

- skin must be supple and coat smooth and dense
- faeces must be of normal consistency
- urine must be a normal yellow color
- must react on your voice or other disturbances
- tail and ears must be active
- ribs cannot be seen
- when lying down to rest, legs are turned inward

Sick animal;

- dullness, watering eyes, discharge
- dry muzzle
- ears are stiff or hanging
- wounds from parasites, yoke or beating
- coat is poor and rough, hairs standing up
- faeces is of abnormal consistency, mixed with blood
- colour of the urine is red or dark brown
- the ribs can be seen

3.2. Causes of harness injuries

Injuries can affect the animal's performance and result in a decrease in productivity. Whenever an animal works there is a potential for injury. Equipment and harnessing are largely responsible for injuries to working animals. It is desirable to take precautions and prevent any injury that might be caused by improper fitting or use of harness and equipment.

3.3. Avoiding harness injuries

The following practices should be carried out:

- ✓ After work each day check the animals for signs of rubbing and hair loss. If these are found, identify what is causing the rubbing before it develops into a sore. Remove the source of the problem and pad the harness in the rubbed area next time the animal is worked to allow the area to recover. Do this before a sore develops.

- ✓ Check the harness for rough and sharp places, replace the piece or remove the cause of the problem before a sore develops on the animal.
- ✓ Replace a poorly designed or old harness, always use the best harness you can.
- ✓ Ensure the harness fits the animal properly and has no sharp corners.
- ✓ Use singletrees and eveners to hitch to the implements or cars.
- ✓ Use breeching straps on animals pulling a cart.
- ✓ Ensure the cart or implement in use fits the animal and is as light as possible.
- ✓ The equipment and especially cart wheels should be kept in a good state of repair.
- ✓ No animal should be worked in excess of its capabilities.
- ✓ The animals should be allowed to rest frequently in the shade and offered plenty of water before, during and after work to prevent heat stress and dehydration
- ✓ Animals in good condition are much less likely to get harness injuries than those in poor condition so feed working animals well.
- ✓ Feed should be given after water.

Table: Harness equipment: causes of injury and preventive measures

Problem area / equipment	**Cause of injury**	**How to prevent**
Harness	Incorrect size and not properly fitted animal Too narrow or thin sharp edges Stitched joints/bolts Unsuitable material	Make back-straps/saddle straps, traces and breeching straps adjustable Use wide bands or straps not sewn with strong thread, rather than bolts or wire Use natural materials, leather where harness is in contact with the animal, or webbing
Pack saddle	Poorly designed and fitted, made of unsuitable materials used	Ensure weight rests on ribs, not backbone Measure on animal when making use light materials Use good padding underneath
Halters Bridles and bits	Attached incorrectly Incorrect size used Unsuitable materials used	Avoid using bits and blinkers where possible Use wide soft straps, not narrow ropes or wire, no sharp edges

		Make sure the halter or bridle is not tight around nose or throat, make it adjustable
Hobbles	Unsuitable material used, not fitted properly	Use on front legs only Use wide straps, no sharp edges Should not constrict blood flow to the feet Attachments should have easy release Should be easy to adjust
Neck ropes or collars	Unsuitable material used not fitted properly	Use wide straps, no sharp edges Should be loose around neck and not be able to slide to tighten Attachments should have easy release
Tillage implements	Too heavy for the animal Incorrectly set for depth or width of operation	Must be suitable for job and soils Add more animals in pairs if necessary
Cart	Too heavy for the animal No brakes (for carts) Poorly designed and hitched No breeching straps on harness Shafts too short	Loads should be well balanced Wheels should be the same size Wheels bearings in good condition / wheel turn easily Breeching strap to prevent cart hitting animal Saddle to enable animal to take weight of shafts on the back not neck Hitching points in right position, allow space for singletrees and evener
All injuries on body	Poor body condition	Give water before feeding, feed wheel Avoid heat stress Do not overload

3.4. Prevention and Routine Medication of Animals

1. Vaccination: Infections and disease in livestock cause huge economic loss to the country. Attention therefore should be given to prophylactic measures to work Animals. Available vaccines in Nigeria are majority bacterial mycoplasma and viral. The vaccines include – Black Quarter Vaccine (BQV), Contagious Bovine Pleuropneumonia Vaccines (CBPPV), Anthrax Spore Vaccine (ASV), Hemorrhagic Septicemia Vaccine (HSV), Hantavac Vomac-3 foot and mouth disease (FMD) and Tissue Culture Rinderpest Vaccine (TCRV) (NVRI, 1999). The vaccines are obtainable in various diagnostic laboratories across the country.
2. De-worming: periodic de-worming of work bulls is necessary and it can be given twice a year, end of rainy season and end of dry season. Various anthelmintis preparations are available in the country. These include Ivomece super, Alfamec, Benezal bolus, Nitroxynil, Piperazine, Tramisol plus, Tradox Wormazine, Vormofas. The drugs can either be administered orally or parentally.

2. **De-ticking:** prevention and treatment of ecto-parasite is necessary in order to get maximum output of the work bulls. Ticks and lice animals to many diseases, therefore prevention is the outmost importance.

Self-Check-3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List the activities in Preventive health care for successful draft animal keeping (3pts)
2. What the cause of harness injury?(2pts)

Note: Satisfactory rating –5 points unsatisfactory rating –below 5 points

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

Answer Sheet

Score: _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions:

1. _____
2. _____

Information sheet – 4	Inspecting and removing Manure, stale feed and soiled bedding

Manure,

Manure, soiled bedding and stale feed must be inspected, removed, and abnormal conditions have to be reported. bedding and feed waste that is collected from barns, draught animal yards and other areas should be properly stored in a suitable location until it can be safely recycled on gardens and cropland. If there is a lack of land and equipment available for spreading manure on-farm, then it should be taken to other places that can safely recycle it. Manure, bedding and feed waste can also be properly composted on-farm to produce a stable, soil-like product that is free of pathogens and weed seeds. This may also increase desirability for use by others (gardeners, etc.).

The main objective of manure handling is to prevent surface and ground water pollution. Generally, the wastes must be held in some way until they can be properly disposed of on the land.

Animal manure may be collected and handled as a solid, and/or as a liquid. If the manure is handled as a solid, then bedding may also be handled with the manure. Liquid systems generally cannot handle bedding.

Proper location of manure storage areas, composting areas, and draught animal yards

- Locate at least 100 feet away from a drinking water well or other water resource including ponds, streams, wetlands and storm drains and ditches.
- Locate downhill from a drinking water well and other water resources where possible.
- Consider neighbors, property boundaries and prevailing winds. Leave a buffer.

Self-Check-4	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Why you inspect manure, stale feed and bedding (2)

Note: Satisfactory rating – 2 points unsatisfactory rating –below 2 points

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

Answer Sheet

Score: _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions:

1. _____

Information sheet – 5	Cleaning stables and surrounding areas

5.1. Raking or forking bedding and add fresh bedding materials

Bedding is raked or forked and fresh quantities have to be added unless it has a deep litter system where system whereby bedding material is added daily. The shed should be open into paddock to allow the animal to exercise. The shed and the paddock should be free from sharp objectives like nails or broken rails. Bedding such as rice hulls, saw dust, bagasse, or hay, used in animal stables will increase the value of the manure. The bedding absorbs and holds the nitrogen rich liquid portion of the manure.

5.2. Clean feed bins, hay nets/bins and water troughs

Feed bins, hay nets/bins and water troughs also must be cleaned thoroughly and troughs are filled with fresh water. Walkways have to be swept and/or raked and manure removed.

Method of Cleaning:

- Manual: **-** removal of soil by scrubbing in the presence of detergent solution.
- Applying Low pressure High volume Spry: **-** the application of water or detergent solution in large volume at low pressure.
- High Pressure Low volume Spry: - application of water and detergent solution low volume at high pressure.
- Foam Cleaning: - the application of detergent in the form of foam. The foam is allowed to react for 15- to-20 minutes and then rinsed off with water spray.

Properties of an Ideal Detergent are: -

- ✓ Good wetting capacity,
- ✓ Ability to remove soil,

- ✓ Ability to hold soil in suspension,
- ✓ Good rinsing property, and
- ✓ None corrosive.

Feed bin management

- Avoid unnecessary waste while cleaning feed bins.
- Leaving spilt feed under the bin only encourages rodents and vermin to the farm - which then consume their own share of feed.
- Routinely and regularly check the outside and inside of feed bins and their distribution systems.

Management may helps to:

1. Use the right feed at the right time

2. Use correct feed

3. Developing a good feed preparation

Feed bin filling

When the feed bin is being filled, avoid all wasted and spilt feed. Once the feed has been delivered, ensure that the feed bins are properly re-sealed.

Feed barrows

If feed is moved around the farm in barrows, ensure that the barrow is kept out of the rain and is covered at all times. Do not overfill feed barrows as this often leads to spillage of feed whilst moving the barrow around the farm. The major important feature of shed is water and water trough for concentrate feed. These can be made of concrete, metal, even wood or plastic. They are put in front of the animal behind yoking bar. Feeding rack can also be constructed for feeding hay and crop residues such as maize Stover.

Self-Check-4	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List methods of cleaning.(2Pts)

2. What is the feed bin management helps you?(2pts)

Note: Satisfactory rating – 4 points unsatisfactory rating –below 4points

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

Answer Sheet

Score: _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions:

1_____

2._____

Information sheet – 6	Reporting Buildings or fixtures that are in need of maintenance

Reporting is an integral part of monitoring and evaluation. Reporting is the systematic and timely provision of essential information at periodic intervals. The report is provided quarterly and annual basis.

The quality of organizational decision depends on the quality of information reported and organized. Report should be objectively and timely. Because, report enable managers to evaluate progress and plan the future. Detailed report is precious formal document prepared and presented by the workers to the higher management concerning the works on operation or completed

Report may be defined as a formal statement describing a state of affairs or what has happened. It has detailed description of a problem or a situation, findings of an investigation and recommendations or actions taken. Or we can say that it is submitted by a lower authority to a higher authority and it is a back bone of communication. The quality of organizational decision depends on the quality of information reported and organized. Report should be objectively and timely. Because, report enable managers to evaluate progress and plan the future. Detailed report is precious formal document prepared and presented by the workers to the higher management concerning about building in need of maintenance.

The report may contain the following:

- The report that represents the result of technical, economic and financial feasibility of the program or project
- Report serves as the basis on the basis of which the concerned government body gives clearance /sanction of the planned works.
- Report serves as guide for the starting and implementation of the planned activities.
- Report is helpful in achieving the time and cost limits in the completion of the planned activities.
- Report is helpful in obtaining technical and financial assistance from different cooperative organizations and bodies.

Self-Check-4	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is reporting?(1pt)
2. When you provide your report to your supervisor?(2pts)

Note: Satisfactory rating – 3 points unsatisfactory rating –below 3 points

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

Answer Sheet

Score: _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions:

1_____

2_____

References