



Animal production Level

NTQF Level -II

Learning Guide 25

Unit of Competence: Assist Basic Husbandry Practice of Camel

Module Title: Assisting Basic Husbandry Practice of Camel

LG Code: AGR APR2 M08 L02 LG25

TTLM Code: AGR APR 2 TTLM 0919v1

LO2. Undertake camel raising work



Instruction Sheet	Learning Guide 25
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Following supervisor instructions and directions and seeking clarification.
- Undertaking camel raising activities

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 –

- Follow supervisor instructions and directions and seeking clarification.
- Undertake camel raising activities

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 1 to 8.
3. Read the information written in the “Information Sheet (1 and 2) in page 2 and 4 respectively
4. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
5. Accomplish the “**Self-check 1 and Self-check 2**” in page 3 and 12 respectively.
6. If you earned a satisfactory evaluation proceed to “the next topic”. However, if your rating is unsatisfactory, see your teacher for further instructions or read back the Learning guide information sheets 1-2. Submit your accomplished Self-check. This will form part of your training portfolio.
7. Read the “Operation Sheet 1-2” in page 13 and try to understand the procedures discussed.
8. Do the “LAP test” in page 14 (if you are ready). Request your teacher to evaluate your performance and outputs. Your teacher will give you feedback and the evaluation will be either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advice you on additional work.



Information sheet 1	Following supervisor instructions and directions and seeking clarification
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Following Instructions and directions provided by supervisor

Instructions and directions provided by supervisor are followed and clarification is sought when necessary. Any employee who works in camel raising industry or any farmer who develops his own stock must follow the following instruction and direction:-

Manufacturer instructions

Material safety data sheets (MSDS)

The MSDS is a detailed informational document prepared by the manufacturer or importer of a hazardous chemical. It describes the physical and chemical properties of the product.

MSDS's contain useful information such as:

- Flash point,
- Toxicity,
- Procedures for spills and leaks and
- Storage guidelines.

Information included in a Material Safety Data Sheet aids in the selection of safe products, helps you understand the potential health and physical hazards of a chemical and describes how to respond effectively to exposure situations

Standard Operating Procedures (SOP)

It is a set of step-by-step instructions compiled by an organization to help workers carry out complex routine operations. SOPs aim to achieve efficiency, quality output and uniformity of performance, while reducing miscommunication and failure to comply with industry regulations

Verbal directions from manager or supervisor

Work instructions and standards



Self-Check -1	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List down 5 instructions and directions provided by supervisor to be followed by an expert in camel raising activity (5pts)
2. Write the useful information contained in material safety data sheet. (5pts)

Note: Satisfactory rating – 10 points Unsatisfactory - below 10 points

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

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date _____

1

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2

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- _____
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Information sheet 2	Undertaking camel raising activities in safe and environmentally appropriate manner
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2.1. Production system of camel

Camel production systems could be categorized in to extensive, semi- intensive & intensive production systems.

2.1.1. Extensive production system:

Extensive system is the traditional way of keeping camels in pastoralist communities throughout the country. Pastoralists used to move with their camel in search of feed & water. Natural vegetation and natural water bodies are the sole sources of feed and water for these camels. Thus, this system has not been improved at any rate for many centuries.

The output or the products produced in this system (like milk) are totally consumed by the family.

Extensive camel production systems are generally characterised by:-

1. The traditional pastoralist way of camel production, where the camel owners (pastoralists) move from place to place in search of feed & water for their camels.
2. No external input is utilised.
3. The products are used for home consumption (subsistence production)

2.1.2 Semi-intensive production system

This system is being developed especially in peri-urban areas, the semi sedentary or the agro pastoralist form of living that has recently evolved in some .In this system, pastoralists are developing new types of camel management practices including the construction of night shelters, provision of supplementary feeds and the use veterinary services. The butchering of camel meat around these towns has also become a common practice adding up to the transformation of the production system.

The system is generally characterised by:

1. The system is mostly observed around peri-urban areas, where the demographic and various economic conditions support the transition.
2. Some external input is utilised in the form of supplementary feeding (especially hay) during feed shortage periods and provision of vet service to sick animals.



3. Extra milk is sold to the nearby market.
4. Complementary with crop production

2.1.3. The Intensive (New) System of Production

The intensive way of camel management for camels kept for research or racing purposes has recently been seen in different parts of the world. This new system has been given recognition as a separate form of camel production. But this practice is limited to very few instances observed only in few countries around the world.

2.2. Feeding and watering of camel

2.2.1. Source of feed for camel

Camels subsist both by browsing on bushes, shrubs and trees and by grazing in extensive production system. As a general rule, when feed is fairly easily obtainable, 6 hours is the minimum time that should be allowed for foraging. At least a further 6 hours are needed for rumination. Camels do not usually forage during the heat of the day. The major feed resources for camels are browsing trees, bushes and shrubs, but grasses may be consumed when shrubs or trees are not available. The camel also has access to feed not available to other domestic species, even the goats because of its height. Camel can therefore make better use of areas where there are large shrubs or trees.

Some examples of natural vegetations (browsers) highly preferred by camels.

- | | |
|---------------------------------------|------------------------------|
| - <i>Acacia Spp.</i> (أشجار) | - <i>Grass spp.</i> (عشب) |
| - <i>Balanites aegyptiaca</i> (أشجار) | - <i>Susbana susbane.</i> |
| - <i>Ficus spp.</i> (شجر) | - <i>Lucenea lecocephala</i> |
| - <i>Morus alba.</i> (شجر) | - <i>Prosopis spp.</i> etc |
| - <i>Cactus spp.</i> (IMsM) | |

In semi-intensive and intensive production system camel is Supplemented with the following Feeds

- Concentrate mixture
- Straw/hay
- Mineral supplements (salts & lime stone)



Supplementary feeding may be required when they Producer large quantity of milk do extra work.

2.2.2. Source of water for camel

Wells, ponds and rivers are the main sources of water for camels in extensive production system. Pond and river water sources are shared by wild animals. Such a state of affairs creates a perfect condition for disease spillover, transmission and spread among animals and to humans. During the rainy season, camels stay for long period of time without drinking water (for one to two months and depend only on the moisture content of the plants browsed.)

2.3. Milking procedure

Camels produce more milk and for longer period of time than any other milk animal held under the same harsh conditions. Milk extraction for human consumption begins three days after calving. Following stimulation of milk let-down by a suckling calf for few seconds, milk is extracted by hand into a milking vessel, commonly a wooden container. Camels are milked in a standing position.

It is also common for two men standing on opposite sides of the camel performing milking simultaneously, each working on the right and left quarters of the udder. Milking frequency ranges from twice to five times a day.

Precautions

Washing of the udder and teats of the camels before milking is not practiced by many pastoralists, and they do not wash their hands and the milking vessels prior to milking. The milking area is generally full of dust and dung and without shade, causing a negative impact on the quality and safety of the milk produced. So any breeder of camel has to know the problems related to the above and take care of it and keep the quality of milk.

2.4. Fattening and condition scoring of camel

2.4.1. Fattening camel

Fattening camel is being common in village and margins of desert areas

Camel fattening because of

- No need to have expensive stables and modern facilities,
- Low work power demand,

➤ Low especial care and relatively cheap feedstuffs is a beneficial job for breeders. Male Camel selected for meat have a large hump; wide posterior parts, firm body, short neck, large and heavy muscular head.

2.4.2. Body condition scoring of camel.

The condition of a camel is estimated by looking at the store of body fat i.e., the hump. This reflects the internal fat reserves and provides a good correlation with total body fat. The camel deposits excess energy as fat into the hump sac and into some internal linings. This contrasts to the energy reserves of other species where fat is deposited into the subcutaneous tissues, internal linings and within the muscles. During processing at the abattoir the internal body fat and hump fat is removed. Excessive fat limits the exercise tolerance of the camel and makes long distance transport stressful. Camels destined for the abattoir should be hump score 3 or 4.

HUMP

SCORE

Range is 1 - 5 based on the amount of fat in the hump

SCORE 1 Little or no fat in the hump sac, hump hairy and may be leaning to one side.



SCORE 2 Hump with moderate development rising 5% higher than chest depth, but may also be leaning to one side.

SCORE 3 Hump with good development and rising to 10% higher than chest depth. Hump is still sculptured inwards on both sides and still fits over the chest and abdominal area.



SCORE 4 Hump fully developed and rising to 15% higher than chest depth. Hump rounded outwards on both sides and runs from the shoulder to the rump.

SCORE 5 Hump over-extended and rising more than 15% higher than chest or the hump is so full that it is rounded on the sides like a semi circle.



2.5. Training camel for different purposes

Camel trained for work like riding, baggage, sport, and ploughing. The usual form of restraining techniques is to seize the upper lip by hand; the camel is then crouched and fitted with a neck rope and a lighter rope with a loop that is placed over the lower jaw. (There will be a practical class on restraining techniques of camel.) The camel is then tied to a tree. After being tied for some time he is released and led out to follow his companions. He may be hobbled (the front leg is flexed at the carpal joint and fixed with a rope) this makes the camel still to move around but only in a limited range and with limited speed. This leading exercise continues and it is taught to crouch (sit) and rise on command. Finally, a pad, and then saddle equipment are put on him and after becoming accustomed to the feel of it, he is loaded tightly.

The whole operation takes about a week. Saddle use training is done by mounting of the rider on to the crouched camel, rising with the mounted rider, crouching with the



rider mounted all are practiced with the words of command. The walk and the run at various paces are taught and practiced. Training of camel for ploughing follows the above procedure, but they are trained with harnesses and implements, which are, adapted that developed for donkeys, mules and horses. The preferred pack camel is the castrated male at the age 4-5 years this is because the females are used for the production of milk and the males have better working potential and continues to work until they are 20years old.

2.6. Assisting breeding operation of camel

Camel is capable to reproduce only after they attain puberty stage.

Puberty: period (stage) of animals when they become sexually active. It is the age at which animals, including camel, are sexually mature. Animals are capable of reproducing themselves only after they reach this stage.

Male camels sexually mature at about 4-5 years of age, while female camels reach puberty at about 3 to 4 years of age. But the fertility of camels is uniquely observed to be stronger in older animals, especially male camels. This means they become more fertile as they get older.

Rutting period and oestrus cycle

Rutting period: - the time when male camel show strong sexual desire. It is the time when different physical and physiological signs of sexual activity are observed in the male camel. Male camels' show a strong rut when they are ready for breeding at various times of the year. The rutting period marks the onset of the mating seasons /the breeding seasons/.

Signs of the rutting camel include:

- Secretions of the poll gland: The fluid has a strong smell and it is useful for attracting females.
- Extrusion of dulaa from the side of the mouth
- Camels become aggressive during rutting
- Frequent urination & splashing of urine on the back.
- Restlessness and Loss of appetite.



- Grinding its teeth
- Waving /shaking its tail & neck
- Repeated loud vocalization and froths at the mouth/gargling

Oestrus cycle / follicular wave /

Oestrus is the regular and recurring sequence of hormonally controlled events, which ends with the release of the ova. Female camels get ready to accept the male whenever there is a mature follicle in their ovaries. This period can last up to 3-10 days depending up on environmental conditions. Ovulation normally occurs approximately 36-48 hrs after copulation.

Long cycles of follicular waves are believed to be associated with environmental conditions including lower environmental temperatures and better nutrition. Remember that rutting is also associated with good nutrition and better environmental conditions. Thus, the breeding season favours both males and females to come in to the reproductive ability simultaneously. This conditions will ensure, especially, longer follicular waves and longer heat periods in females as well as strong rut in males.

The mating in camel is of unique in that it takes place with the sitting position. After Successful pregnancies can be achieved gestation period in camels is about 387 days on the average (13 months).

2.7. Assist parturition and Taking caring of calves

Parturition in camel is completed in relatively short periods and dystocia and mal-presentation of the calves during parturition is not common. In the case of difficulty birth assisting important for calve and dam. Camels do not lick their calves and eating their placenta is not observed at all licking their young and eating their placenta (afterbirth) is a common activity in almost all other domestic animals.

Taking care of calves

Feeding colostrums at early age (first few hours of its life) develop immunity of calves. It gives energy to newly born calf and has antibodies that help the calf to fight infections. When the calf reaches 1 month of age provide fresh grass and some supplementary feeding for stimulating their digestive system (stomach).Weaning is the time when



young animals stop drinking milk and start to feed other feeds. Camel calves are usually weaned at an age of 6 to 12 months.

Castration

Castration in camel is done for the following purposes:

- To make the animal less aggressive & stop them fighting each other (easier to handle)
- To stop poor quality animals from breeding.
- Castrated animals grow faster and produce higher value meat.

The recommended age in which male camels are castrated is at about 2 years.

The appropriate castration method in camels is the open or surgical method by removing the testes because of shape & thickness of the of the scrotum (scrotum is thin and testes are not in separated compartment like that of cattle to used Burdizoo)

- Castrated animals should be kept in clean surrounding and pasture also supplementary feed until the wound has healed .It needs to be inspired
- to ensure that the wound does not became infested
- It there is any sign of trouble appropriate remedial action including cleaning the affected sea apian and injection of a systemic antibiotic may be needed

2.8. Inspecting health status and identifying main camel diseases

Assessment may be by direct observation of general health and soundness, checks of performance, and inspection of camel records. Checks of performance can be done by assessing types of performance loss due to ill health. These are

- Reproductive loss – failure to conceive, delayed conception, abortion, stillbirth (in females), poor libido and low viability of sperm (in males).
- Reduced growth rate – reduced appetite/ loss of weight
- Reduced output of animal products – milk, meat, work
- Loss of value and exclusion from market – reduce the market value of the product through lowering the quality

Some of common camel diseases

- Trypanosomiasis, Parasitic Diseases and Anthrax
- Camel pox, Rabies
- Tuberculosis etc



Self-Check- 2	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write three characteristics of extensive camel production system (3pts)
2. Write the signs of rutting in male camel. (5pts)
3. List down 4 common natural vegetation or browse plants preferred by camels. (4pts)
4. List down the common diseases in camel production (5pts)

Note: Satisfactory rating – 17 points Unsatisfactory - below 17 points

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

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date _____

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- _____

2.

- _____
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3.

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4.

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Operation sheet-1.	Hand milking
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Steps of hand milking

- The owners prepare a milking vessel/container
- Bring lactating camel to a separate open milking area where the calf is kept.
- Restrain camel properly
- Then, the calf is allowed to suckle its dam for a few seconds to around a minute to stimulate milk ejection.
- After this, separate the calf from the dam
- Start milking at a standing position with one knee raised to support the milking vessel on his lap.
- Complete milk with recommended time.

Operation sheet-2	Castration of camel
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The procedure in castration of camel

1. Castration equipment & surrounding area should be cleaned
2. Make the camel lie down and roll him on to his right (secure all his legs with rope)
3. Clean the scrotum with alcohol and disinfectant
4. Inject 20 ml of local anesthetic in to the cord and testicles on each side of the scrotum
5. Squeeze the front of the scrotum to force the testicles to the back.
6. Make a small cut with knife or blade on the back of the scrotum to expose the testicles.
7. Pullout the testicles and tie with stitching material (to avoid bleeding) and then cut the testicles out.

After castration: apply antiseptic and antibiotic powder sprinkled on it to avoid infection.



LAP Test	Practical Demonstration
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Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 3 hours.

Task 1. Hand milking

Task 2. Castrate of camel

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Reference

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- Somali Academy of Sciences and Arts. ---, (1984b): <<Traditional systems of management and husbandry of camels in Somalian, in Mohamed A. Hussein (ed.), Camel pastoralism in Somalia: Proceedings from a workshop held in Baydhabo, April 8-13, 1984, pp. 37-48. Camel Forum, n." 7. Somali Academy of Sciences and Arts.
- Wolde, Abebe. 1991. Traditional husbandry practices and major health problems of camels in the Ogaden (Ethiopia). *Nomadic Peoples* 29: 21–30.