Dairy production

NTQF Level -II

Learning Guide 48

Unit of Competence: Follow up dairy animal parturition

Module Title: Following up dairy animal parturition

LG Code: **AGR DPR2 M13 L01 LG 48**
TTLM Code: **AGR DPR2 TTLM 1219v1**

LO 1: Prepare for calving

Instruction Sheet	Learning Guide 48

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

- Assessing and monitoring condition and health status of dairy animal
- Checking and preparing birthing equipment, resources and materials.
- Grazing Dairy animals at risk of calving difficulty / management of dairy animals
- Identifying hazards in assisting with calving
- Safe working practices assisting with calving
- Confirming mating records

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 –

- Assessing and monitoring condition and health status of dairy animal
- Check and preparing birthing equipment, resources and materials.
- Graz Dairy animals at risk of calving difficulty / management of dairy animals
- Identify hazards in assisting with calving
- Safe working practices assisting with calving
- Confirm mating records

Learning Instructions:

1. Read the specific objectives of this Learning Guide 48.
2. Follow the instructions described in number 1 to 5
3. Read the information written in the “Information Sheet (**1, 2 3, 4, 5 and 6**) in page **2, 5, 6, 9, 11, 13 and 16** 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, 2 3, 4, 5 and 6”** in page**, 5, 8, 10, 12, 15 and 18** respectively.

Information sheet-1	Assessing and monitoring condition and health status of dairy animal

Pregnant cows should be fed adequate amounts of all nutrients. During the last two months before parturition, the recommended energy allowance for the pregnant heifer is 50% to 60% higher than for a non-pregnant heifer of the same size. Provision of good quality feed and water is the most important of dairy animal. The most important types of feed that have given for pregnant dairy animals are

- Suitable feeds like wheat bran, oats and linseed
- Digestive crud protein and total digestive nutrient must 16-18% and 70% respectively
- Succulent green palatable fodder 50-60%legiums are suitable
- A special pregnancy require 1-2kg of concentrate should be offered

The essential nutrient is important for pregnant dairy cow for overcoming nutrient deficiency. They are Carbohydrate, Protein, Lipid, Vitamin and Minerals.

1.1 Monitoring body condition of dairy animal

Body condition influences productivity, reproduction health and longevity of dairy cattle. Tines or fatness can be overcome a clue to underline nutritional deficiency, health problem or improper herd management. If done on a regular basis, body condition score can be used to troubleshoot problem and improve health, productivity, reproduction and longevity of dairy herd. Body condition score 3 is good for dairy animal.

Body condition scoring an effective management tool to estimate the energy reserves of cow. Regular monitoring of body condition score essential for change in energy balance and is thus a crucial part of fertility. There is a relationship between body condition scoring and reproduction performance.

Poor body condition is associated with

- Reduced income per cow
- Increase postpartum interval
- Increase dystocia
- Lower weaning weight

Excessive body condition associated with

- Reduce fertility
- Cause ketosis
- Longer interval to first ovulation, heat, insemination, and conception

BSC 1-2-too thin feed more.

BSC- 3 just right

BSC- 5 feed less

Fig 1. Body condition score of dairy animals

1.2 Health status of dairy animal

All cows should be in good physical condition. Good herd management demands that the dairy herd be kept free from diseases. Studies have shown that the monetary profits from diseased herds are decreased from 15% to 25%. Dairy cows should be tested every year for TB and Brucellosis and kept free of such common diseases. The herd should also be kept free and tested regularly for such diseases such as mastitis. Before dairy cattle are bought they should be tested and found free of these diseases.

Dairy cattle should be kept free of venereal diseases such as vibriosis, trichomoniasis and

infectious pustular vulvo-vaginitis (IPV) can cause havoc in the herd. As a herd problem these diseases seem to be most important in that they increase the number of services per conception and thereby lowering the breeding efficiency. New animals to be purchased should be certified free from these diseases or should be segregated and tested before being mixed with the herd. By means of A.I. most venereal diseases can be effectively controlled and eradicated.

Self-Check -1	Written Test

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

1. Write results poor body condition (5 points)
2. Write results excusive body condition (5 points)

Note: **Satisfactory rating - 10points** **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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Information sheet-2	**Checking and preparing birthing equipment, resources and materials.**

As with any work area on the farm, having the proper equipment, keeping its maintained and disinfected and stocking the area right place will helping ensure a successful calving season.

2.1 Birthing equipments

- Bucket (stainless steel or heavy plastic rubber) for water + disinfectant
- Water boiling equipment
- Disinfectant preferably iodine based
- Antiseptic soap (surgical scrub) is non irritating to the vulva area and your skin as well is must.
- Disposable long-sleeve obstetrical glove
- Lubricants in squeeze bottle
- calf pullers
- calf chains
- halters
- Oxytocin and epinephrine: it is important dealing with mal-presentation of calf's head or feet is back or it breech and you think you can fix it giving the cow 10cc of epinephrine in the neck will relax her uterus.
- Ropes.
- Rags or roll cotton used for washing cow
- Flashlight
- Bottle and lamb nipple

All materials, tools and equipment will be clean and disinfected well.

 Calving jar	 Calf pulling chain	 Calf pulling sized rope	 calf Pulling belt
 Bucket	Rope	 Detergents	

Fig 1. Calf parturition equipments

2.2 Equipment cleaning procedure

- First wash all materials with cold water
- Wash again with boiled water
- Disinfect by recommended disinfectant
- Store in cool place
- Dispose disposable materials or equipments.

Self-Check -2	Written Test

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

1. Write five birthing equipment (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

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Information sheet-3	Grazing Dairy animals at risk of calving difficulty

You must remember that a pregnant animal will need more feed and will benefit from the addition of some grain to the feed towards the end of pregnancy. All pregnant animals should be kept close to home towards the end of the pregnancy and some form of shelter should be provided. They should be watched twice a day for signs that parturition is close. In particular cattle and cattle need a clean, well ventilated place, preferably with a sand or grit floor on which suitable bedding is placed.

Do not keep a pregnant animal constantly tied up or with little room to exercise in. Allow her some free doming a field or yard each day. She should be observed closely twice a day for signs of parturition.

Importance of keeping pregnant animals on pasture

- Minimize calving difficult
- Increase mental readiness of calving cow
- Increase fetus development
- Cow get different nutrient from the pasture
- Walking or exercising improve the health
- Easily manageable
- Used for optimum time for calving

Self-Check -3	Written Test

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

1. Write importance of keeping pregnant animal on pasture (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

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Information sheet-4	Identifying hazards in assisting with calving

Calving is a challenge time in term of health and safety and there's a lot to think about from setting up calving sheds and putting together calving kits, to managing hygiene and planning.

Some hazard associated in assisting with calving

- Struck by guide gates: it is a hazard found working environment like house gate, fence gate and crush gate may not work affect when carefully.
- Struck by animal: some animals shows aggressive behavior and struck the managers and calving difficulty may results kick behavior of animal because of pain and discomfort.
- Tripping hazard on birth fluids on ground surface: if we cannot clean and wash the floor of delivery room it causes injury. The fluid have slipper by nature especial cement floors
- Zoonotic disease potential: zoonoses are a disease transmits from animal to human and a risk when assisting of parturition. These are disease transmitted through contact with blood, saliva and urine.
- Equipment failure resulting in worker injury: any working equipment fail on the ground it can be injury for both human and calving animals.
- equipment if animal falls during procedure
- Finger entrapment in either ropes or calving aid device: at time of helping parturition in dairy animals we can use different equipment like rope or chain. The materials may entrapment our fingers. We must did such kinds of job with carefully or safely.

Self-Check -4	Written Test

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

1. What are the hazards associated in assisting with calving (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

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Information sheet-5	Safe working practices assisting with calving

5.1 Safe working practices

For the calf, dam, and attendant providing assistance, protection from the elements is the most desirable. Being dry and warm will go a long way in encouraging the use of proper techniques in dystocia management. The delivery area should have a straight-sided head catch with side gates that are hinged on each side of the head catch to swing freely to either side with sufficient room to the sides and rear to allow assistance with the needed personnel or fetal extractor. This allows the cow to go down and still breathe comfortably. A cement floor is recommended for cleaning purposes with access to both hot and cold water preferred.

To assist a cow in parturition, the following safe working practices are required

- Preparing all necessary materials, tools and equipments and clean, wash and disinfect well
- Personal protective equipment arm length glove, eye protection and waterproof
- Calving gown and appropriate assistance
- Enter calving pen calmly and move cow to restrain within appropriate head gate.
- Apply calving rope to calf's legs and calving jack appropriately and apply appropriate traction once calf is properly aligned.
- Once calf is delivered remove calving ropes leave calving area and disinfect and wash equipment appropriately.
- All houses should be adequately ventilated allowing for an adequate supply of fresh air, allowing heat dissipation and preventing the build-up of carbon dioxide, ammonia or slurry gases.
- Surfaces that cattle walk on should be designed, constructed and maintained to avoid discomfort, stress or injury to the animals. Surfaces should be even and non-

slip to avoid dangerous underfoot conditions. Uneven surfaces cause bruising of the feet and smooth surfaces can cause slipping

- The accommodation should contain sufficient sources of natural or artificial light so as not to cause discomfort to the animals. Artificial light should also be provided to enable adequate inspection of the animals in particular for cows in late pregnancy and young calves.
- The calving area should provide adequate space, be tidy and well-bedded with clean dry straw, free of obstructions with good lighting. Well-designed calving pens and gates minimize the direct physical contact between the cow/heifer and the farmer.

Self-Check -5	Written Test

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

1. Write down five safe work practice regarding to calving assist (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

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Information sheet-6	Confirming mating records

Breeding Records: The ideal calving interval for the dairy cow is 12 to 13 months. In other words it is desirable to have every cow in the herd freshen every 12 months. In order to approach this goal as closely as possible dates of freshening (parturition), heat periods, breeding, abnormal conditions etc must be recorded. Such

Records serve the following:-

- ☞ Indicate when to start breeding
- ☞ Aid in feeding program
- ☞ Indicate feeding efficiency
- ☞ May suggest disease problems or need for veterinary service
- ☞ May suggest infertility of a bull being used
- ☞ Indicate when to turn cow dry
- ☞ Indicate approximate date of calving
- ☞ Show parentage and calving date.

Through record keeping a dairy - man has a complete reproductive history of each cow in the herd. He knows when she is due to be bred, when she is bred, the sire used, and when she is due to freshen. If the cow does not come into heat or does not conceive in the normal period of time, the dairyman has the information readily available. Breeding normally should be started 60 to 90 days after calving. This timing gives the fresh cow a better chance to recover from any uterine infection and generally results in conception with fewer services. With such records a breeding problem usually can be detected before it has done serious

Damage and the veterinarian can identify the cause of the problem much more readily. The cow can be turned dry on the proper date so that there will not be an excessively long wasteful dry period or a period so short that the cow does not get adequate rest. A dry period of 60 days is considered ideal. A breeder of purebreds has to maintain accurate breeding records for purposes of registering animals and writing pedigrees. In fact he is normally obligated to do so.

Self-Check -6	Written Test

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

1. Write five importance of dairy animal mating record (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

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Reference

Wattiaux, Michael A. 8) The Reproductive Function of Dairy Cattle Babcock Institute fo International Dairy Research and Development, University of Wisconsin-Madison, Dairy Essentials, 29-32.

Wiegel, Kent A. New Genetic Evaluations Consider the Cow's Contribution to Calving Ease University of
Wisconsin, 1996.

Dairy production

NTQF Level -II

Learning Guide 49

Unit of Competence: Follow up dairy animal parturition

Module Title: Following up dairy animal parturition

LG Code: **AGR DPR2 M13 L02 LG 49**
TTLM Code: **AGR DPR2 TTLM 1219v1**

LO 2: Observe the calving

Instruction Sheet	Learning Guide 49

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

- Monitoring cows for signs of approaching parturition and throughout calving.
- Noting Signs of calf mal presentation or dystopia

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 –

- Monitor cows for signs of approaching parturition and throughout calving.
- Noting Signs of calf mal presentation or dystopia

Learning Instructions:

1. Read the specific objectives of this Learning Guide 49.
2. Follow the instructions described in number 1 to 5.
3. Read the information written in the “Information Sheet **1and 2** in page **2and 7** 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 2”** in page **6 and 9** respectively.

Information sheet-1	Monitoring cows for signs of approaching parturition and throughout calving.

Parturition is the act of giving birth. Prepartum occurring before birth and Postpartum: occur after birth. The duration of pregnancy (the gestation period) in cows is about 283 with a normal range of 273 to 291 days, in sheep 152 days and in goat 150 days.

Gestation is the period of development during the carry of an embryo or fetus of mammals. It is varies species to species.

Calving is a natural process which normally takes place without help. Close observation is required in case the cow has difficulties.

1.1 Signs of approaching parturition in cattle

- The belly has increased in size, especially on the right flank.
- The udder is filling up and the teats are stiffening.
- The vulva becomes red and swollen with the presence of mucous and blood colored fluid.
- The vulva swells to six times its normal size.
- Production of colostrums, a creamy or pink secretion begins from the udder.
- The white stringy vaginal mucus becomes more profuse.
- The mucus plug in the cervix liquefies.
- The animal usually moves to a quiet spot away from the rest of the herd.
- Heifers may become restless and lose their appetite.
- Pelvic ligaments relax under the influence of relaxing, 24 to 48 hours before calving,
- making the tail appear to be set higher and causing a looser walking action

Calving brings new life to a dairy farm, a new calf is born and a new lactation begins for

the cow. These great beginnings start with managing calving successfully.

Parturition is initiated by hormonal and physical changes at the end of gestation, approximately 280 days in dairy cattle.

A dairy cow will gradually progress through three stages to deliver her calf.

Stage 1: The calf moves into position as the cervix and birth canal begin to dilate. Signs that may or may not be noticeable include: restless behavior, frequent transition from laying to standing, raised tail head, vocalization, increased urination and defecation, full udder, and mucus discharge

Fig 1. sign of calving

Stage 2 : The cow or heifer has a fully diluted cervix and the calf moves through the birth canal. The appearance of the membranes (“water bag”) and abdominal contractions are evident as the calf’s legs become visible.

Fig. 2. Expulsion of placenta

Stage 3: Expulsion of the fetal membranes (placenta) occurs 8-12 hours post calving. If

it takes longer than 24 hours, it is considered retained membranes or placenta.

Fig 3. Placenta

Normal delivery presentations:

- Normal anterior presentation
- Normal posterior presentation

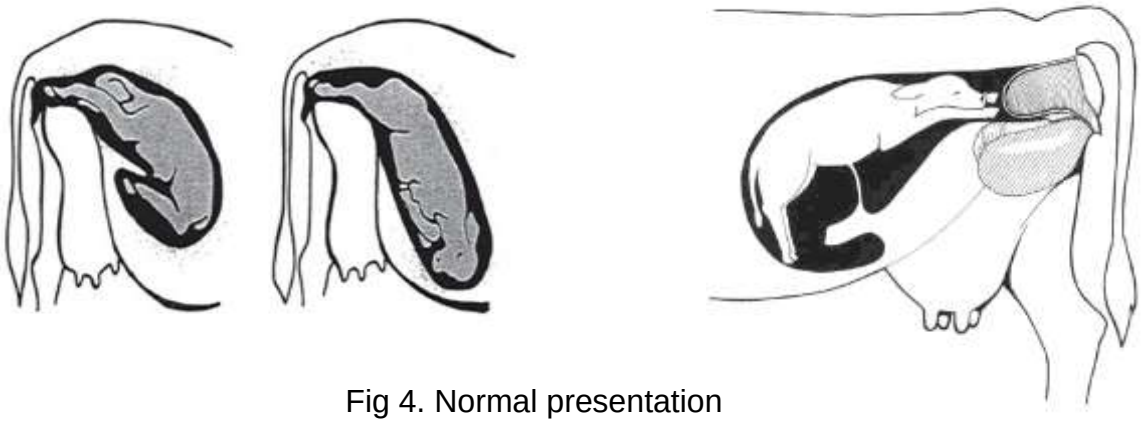

Fig 4. Normal presentation

1.2 Signs of approaching parturition in sheep and goat

Lambing and kidding, like calving, are natural processes which normally take place without help. Observation is required in case there are any difficulties. Sheep and goats, unlike cattle and buffalo, may frequently have twins (2 young) or triplets (3 young).

You will know when the goat or sheep is about to give birth as:

- The animal keeps away from others.
- The vulva is swollen and the skin is loose.
- The animal becomes restless and does not eat well.
- A discharge from the vulva will start a few days before parturition.

- The sheep will lie down and stretch the neck back to look at the sky (star gazing) and lick its lips.
- The sheep will strain to push out the lamb.

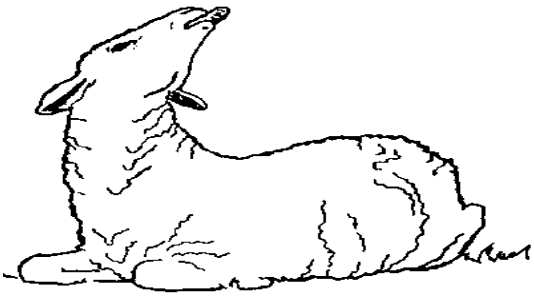


Fig 5. Star gazing and fluid from vulva

Normal parturition

Animals may give birth while standing or lying down. The head and both front legs appear while sometimes both the hind legs will appear. The young mother may have some problems in giving birth.

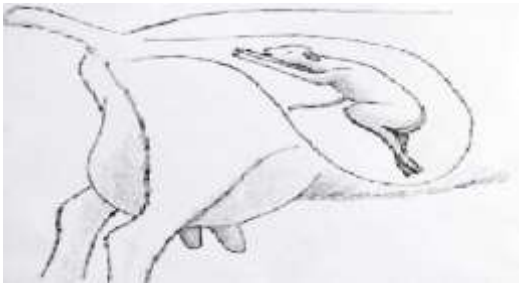


Fig. 6 normal parturition: JICA Project Team

Self-Check -1	Written Test

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

1. Write Normal delivery presentations: (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

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Information sheet-2	Noting Signs of calf mal presentation or dystopia

Dystocia is the scientific word used to describe a difficult delivery during the birthing process. In cattle, such difficulty occurs most frequently in first-calf heifers. On the average, 50 percent of dystocias in cattle occur in first-calf heifers and 25 percent occur in second-calf heifers. The remaining dystocias are distributed throughout the rest of the calving cow herd.

2.1 Causes dysocia or calving difficulty

- Disproportionate size -the calf is too big for the birth canal.
- Body condition of cow, too fat or too tin
- Birth weight
- Deformed fetus and twin
- Uterine inertia
- Mal-presentation fetus
- Incomplete dilation of cervix
- Calf's breed, sex and conformation

2.2 Abnormal delivery presentations in cow

- All four feet and head presented
- Posterior presentation without feet.
- Feet presented but head in back.
- front legs do not protrude within 2–3 hours
- The calf may be turned in the womb.
- one front leg is protruding
- the head is turned sideways
- the calf is facing backwards in the womb with its legs underneath,
- The calf is born dead, clean the cow up immediately.

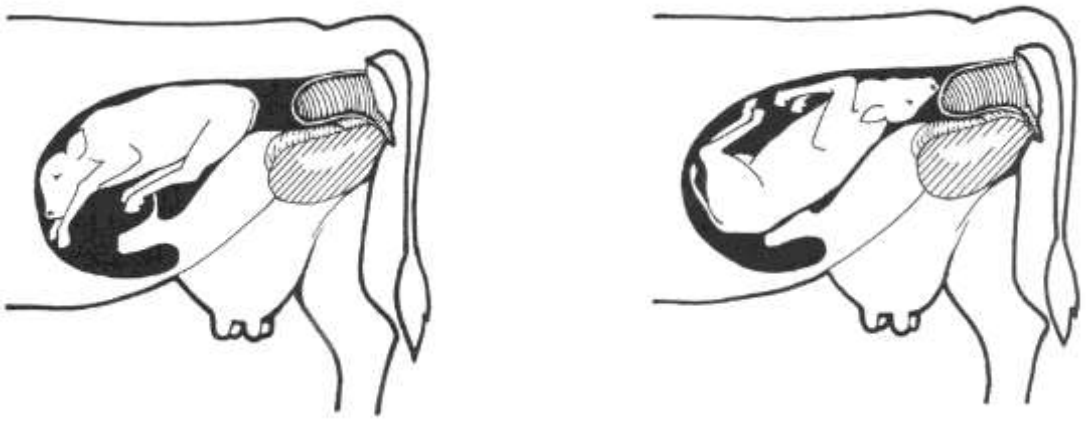
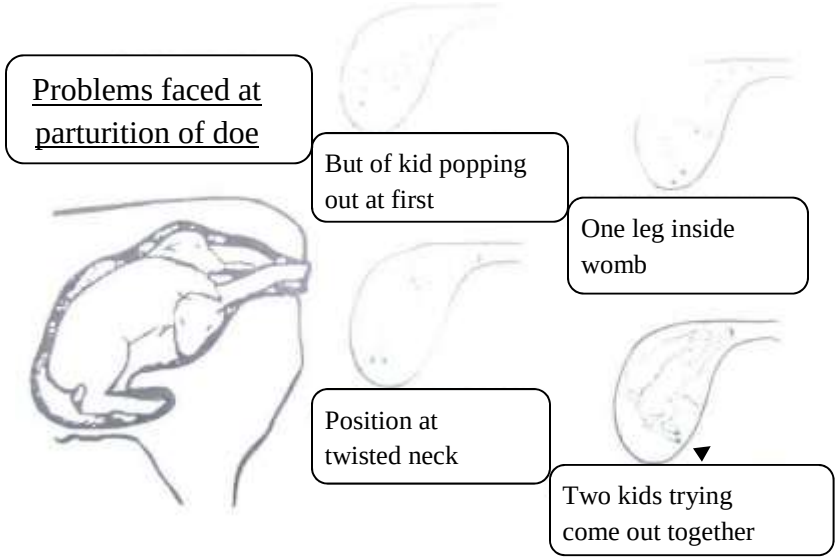


Fig 7.difficulty position of calf

2.3 Problems faced at the time of parturition in sheep and goat

If the labor is prolonged, and kid does not come out, urgently technician or skilled and experienced person has to be called for help. In below diagram (left side of figure), if kid/s is in such position, without any problem it will come out. In other cases, if position of kid/s is in different position (cases in right side of figures), such kid/s must be moved to normal position and pulled out.



Self-Check -2	Written Test

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

1. Write four abnormal delivery presentations signs in cow: (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

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Reference

Hartwig, Nolan, D.V.M. *Sheep Health Fact Sheet… No.7 Dystocia (Lambing Problems)* Iowa State University, University Extension, April 2000.

Heckart, Melissa, Robert Pearl, and Chris Wehmer. *The Lambing Process* Purdue UniversitySpring1998.<http://ag.ansc.purdue.edu/sheep/ansc442/Semprojs/lambing/lamb.html>

King, Gordon. *Considerations at Farrowing Time* Animal Science, University of Guelph, Canada.

Dairy production

NTQF Level -II

Learning Guide 50

Unit of Competence: Follow up dairy animal parturition

Module Title: Following up dairy animal parturition

LG Code: **AGR DPR2 M13 L03 LG 50**
TTLM Code: **AGR DPR2 TTLM 1219v1**

LO: 3 Support calving

Instruction Sheet	Learning Guide 50

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

- Handling calving cows calmly and put in a secure environment.
- Implementing hygiene procedures
- Estimating the orientation and size of the fetus relative to the pelvis
- Checking the possibility of twins
- Checking the position of the lead fetus
- Manipulated physically abnormal presentation into the correct position
- Placing calving ropes/chains on the calf above the front fetlocks a
- Applying calf pulling equipment appropriate in the case of dystocia
- Browning specialist support to assist the calving.

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 –

- Handle calving cows calmly and put in a secure environment.
- Implement hygiene procedures
- Estimate the orientation and size of the fetus relative to the pelvis
- Check the possibility of twins
- Check the position of the lead fetus
- Manipulate physically abnormal presentation into the correct position
- Place calving ropes/chains on the calf above the front fetlocks a
- Apply calf pulling equipment appropriate in the case of dystocia
- Brown specialist support to assist the calving.

Learning Instructions:

1. Read the specific objectives of this Learning Guide 50.
2. Follow the instructions described in number 1 to 5.

3. Read the information written in the “Information Sheet (**1, 2 3, 4, 5, 6, 7, 8 and 9**) in page **3, 6, 9, 13, 15, 17, 21, 23 and 25** 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, 2, 3, 4, 5, 6, 7, 8, and 9”** in page**, 5, 8, 12, 14, 16, 20, 22, 24 and 26** respectively.

Information sheet-1	Handling calving cows calmly and put in a secure environment

1.1 Handling calving cows

Calving problems are common particularly in the first calf heifers. Early intervention not only prevents calf losses but also protects subsequent fertility. The person assisting must be clean and should be follow some simple guideline to determine whether a calf can be pulled with reasonable force or whether the delivery will require more drastic measure of a calf puller or cessation section.

- Ideal cow should calve on grass in clean pasture which is free from standing water and which has shed
- The pasture should also be close enough to permit regular and easy supervision
- It must be further be easy to take the cow or heifer to calving stanchion for close observation and assistances
- Working area should be provide protection from whether and must have running water and a cabinet for instrument and supplies.
- A maternity barn with well- bedded individual pen is a good alternative to a calving pasture; the pen must be clean and thoroughly between each use.
- Restraining is very good but not consists of a standard squeeze chute since most cow do down during the actual delivery. A head get with hinged down side panels which swing away the back end of the cow are excellent
- There must be room for the cow lie down plus room for assistants to work behind the cow
- The area must be free from any disturbance
- Any hazardous material should be cleaned from the area

Fig 1. calving room

Self-Check -1	Written Test

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

1. Write how to handle calving cow: (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

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Information sheet-2	Implementing hygiene procedures

2.1 Hygienic procedure

One of the to key keeping the dairy animals health is reducing disease causing pathogens at their source using proper hygienic procedures. Pathogen exposure points are dairy animal house and feeding equipment/utensils. Although monitoring and documenting the effectiveness of sanitation protocol is important, the identification and isolation of sick animals may also need to be implemented to prevent the further spread of disease. The following are important hygienic procedure

2.1.1. Maternity pen hygiene procedure

- Provide fresh/ clean bedding: for optimal newborn health, calves must be delivered in clean, dry area, maintaining minimal pathogen exposure.
- Navel dipping: carefully and consistent navel dipping is a hygiene step that not only kills pathogens at the navel opening but also helps close the umbilical cord.
- Separation of calf from dam: shortly after birth an important hygienic procedure by controlling this asepect of the calf's environment. You are removing a huge source of fecal bacteria from the calf environment.

Cleaning the maternity pen

- Remove bedding from the calving area between each calving
- If the calving pen floor is concrete, rinse floor area removing as much as organic as possible
- Apply a chlorinated alkaline foaming detergent
- Rinse with water, allow pen to dry
- Use acepsis calf hygienic concentrate, used to maximize protection.
- Allow to dry prior to re-bedding the pen

- Re-bedding calving area with clean/fresh bedding

2.1.2 feeding equipment/ utensils hygiene procedures

Because of feeding equipment come in direct contact with animal mouth, disinfection is crucial in preventing the spread of disease. Careful attention to cleaning protocol will decrease the pathogenic load on feeders, waterier and other feeding equipment resulting in healthier calves.

Cleaning feeding equipment and utensils

- Rinse all equipment/utensils with warm water (45^0 C) removing organic matter before washing
- Sock the equipment/utensils in hot water (60^0c) with a chlorinated alkaline detergent
- Remove alkaline solution and fill sink with cold rinse water
- Let sit and allow to air dry to use

Self-Check -2	Written Test

Information sheet-3	Estimating the orientation and size of the fetus relative to the pelvis

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

1. Feeding equipment/ utensils hygiene procedures: (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

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2.1 Size of fetus relative to pelvis

We also know that the single major cause of dystocia is a disproportion between size of the calf at birth (birth weight) and the cow's birth canal (pelvic area). Differences in pelvic area are generally due to pelvic height, with discrepancies between the dam and fetus more likely to occur for pelvic height and depth of calf chest than for width measures. Pelvic size, independent of cow weight, affects calving difficulty. Heifers of increased skeletal size usually have larger pelvic openings, but also tend to have heavier calves at birth. Hence, selection for cow size alone is ineffective.

Heifer weight and age generally have a positive relationship to pelvic area, but weight is not always a good indicator. External dimensions such as width of hooks and length of rump are not good indicators of pelvic area or calving difficulty. For these reasons pelvic measurements can be a useful management tool to eliminate heifers with a higher potential for calving difficulty. Pelvic Measurements University of Nebraska researchers developed ratios that you may use to estimate deliverable calf size. You can divide total pelvic area prior to breeding by a ratio that is based on age and weight to estimate the amount of birth weight a heifer could accommodate as a 2-year-old without substantial difficulty.

Example: A 600-pound yearling heifer (Table 1) with a pelvic area of 140 sq cm should be able to deliver, as a 2-year-old, a 67-pound calf without difficulty (140/2.1 = 67). Pelvic measurements can be obtained at the time of pregnancy exam, but a factor of 2.7 should be used to estimate calf birth weight of 18- to 19-month-old 800-pound heifers or some producers may wish to adjust pelvic areas of heifers to a standard 365 days of age.

This can be accomplished by using the following formula:

365-Day Pelvic Area (heifers) = Actual Pelvic Area (cm2) + [0.27 x (365 - age in days)]

Increased skeletal size of the dam will be reflected in higher birth weight and dimensions of the calf. Pelvic measurements, on the other hand, can be used to successfully identify

abnormally small or abnormally shaped pelvises. These situations, if left unidentified, are often associated with extreme dystocia, resulting in Cesarean delivery and even death of the calf or cow.

The vertical measurement is the vertical diameter between the syphilis pubis on the floor of the pelvis and the sacral vertebrae. The horizontal measurement is obtained by determining the horizontal diameter at its widest point between the left and right ilea shafts These measurements are read in centimeters and multiplied together to obtain the total pelvic area in square centimeters. Material used to measure pelvic bone is rice pelvimeter.

Fig 2. rice pelvimeter

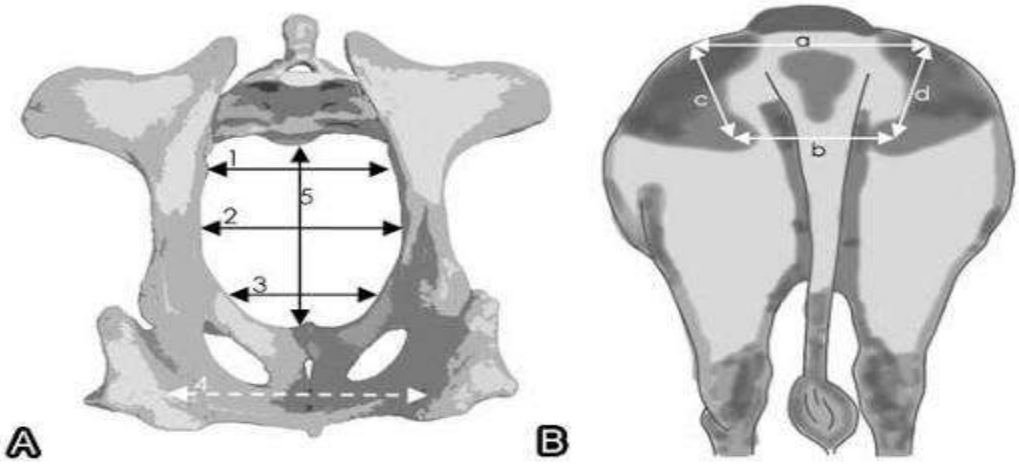

Fig 3. (A)internal pelvic measurement (B) external measurement of pelvic measurement

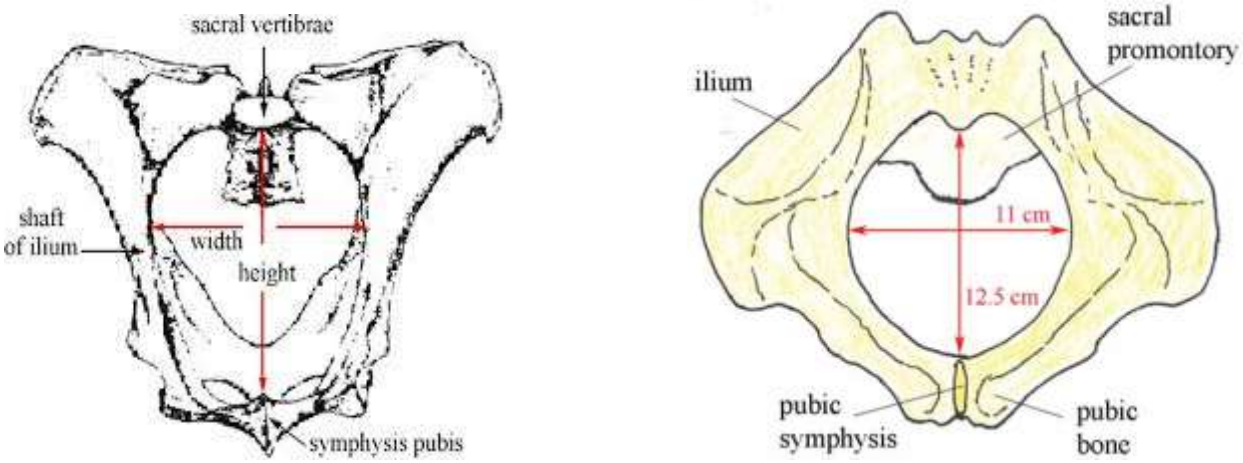

Fig 4. pelvic measurement

2.2.1 How to Measure Pelvic Area

A sliding caliper device referred to as a Rice pelvimeter1 is used to measure the pelvic area of heifers. The Rice pelvimeter was specifically designed for taking this measurement, which is determined rectally and results read externally in centimeters (cm).

To measure internal pelvic area,

- The technician must first clear the rectum of feces.
- The pelvimeter is then introduced into the rectum inside the cupped,
- gloved hand of the technician, and pushed into the pelvic inlet with the other hand,
- Taking care not to force the device with undue pressure.
- The height (vertical measurement) is determined by measuring the linear distance from the approximate midpoint of the top surface of the symphysis pubis to the bottom surface of the midsacrum.
- Pelvic width (hori-zontal measurement) is measured as the linear distance between the shafts of the ilia at right angles to where the height was measured.

Self-Check -3	Written Test

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

1. Write material used to measure pelvic and its function: (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
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Information sheet-4	Checking the possibility of twins

4.1 the possibility of twins

Twining is undesirable occurrence in dairy cattle with birth, with the birth of more than one calf thought to be responsible for subsequent health issues in both cows and calves. While producing twin something of a genetic lottery.

Identify dairy twins are the result of double ovulation and splitting of egg. The cow release two eggs, they were both fertilized and both implemented. In cows this is called dizygous twins.

Having twins leads to more retained placentas and uterine infection. Carrying and growing two calves takes a toll on a cow. We do our best to keep all your cows healthy.

Common presentation of twins

- One back ward and one forwards
- With back ward presentation the likelihood of a full berach (tail first) is increased and these often require veterinarian intervention. These have a great loss if the breach birth first preventing the second calf from being born and both are born dead. In calving twins out, remember to follow the leg back to make sure they are from the same calf and the top calf is one that must come first.

Problems of twins in cattle

- Increase difficulty in birth
- Low survival of caves
- Long stage of labour
- More prone to certain clinical disease
- Retained placenta
- Prone metrits

Information sheet- 5	Checking the position of the lead fetus

Self-Check -4	Written Test

Fig 5. Twins in cattle

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

1. Write the problems of twins in cattle. (5 point)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

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5.1 Position of fetus

It is the orientation of fetus in the uterus, identified by the location of the presenting part of the fetus relative to the pelvic of the mother. Conventionally, it is the position assumed by the fetus assumes various position and postures during the course of calving. Depending on which part of the fetus is expected to be delivered first (fetal presentation),

There are many possible positions:

- Upside down position
- Right side up position
- Back to either side of the pelvic canal of the cow

Presentation describes the relative direction of delivery.

The calf maybe presented

- Frontward
- Back ward or
- Crosswise the pelvic opening

Posture indicates the location of the legs, head and neck. If the calf is presented front wards, one or both front legs are may be turn back or the head may be down and the feet in correct position. A fetus in backward presentation may have one or both hind legs flexed at the hock or hips. The normal presentation of the calf is front wards. Although a calf can be pulled in a back ward presentation. There is some danger. The normal presentation of the calf is back side up, never pull a calf in any other position because the chance of killing both the cow and calf are great. The correct posture of the fetus is with both front legs out stretched in the birth canal and with the head and neck extended along the legs.

Self-Check -5	Written Test

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

2. Write three possible of calf positions for delivery: (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

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

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

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Information sheet-6	Manipulated physically abnormal presentation into the correct position

6.1 Delivery of the backward calf by forced extraction

The test for delivery of a calf in the backwards presentation but normal position and posture differ in that the fetus should be first rotated 45-90 degrees by crossing the legs before attempting delivery to take advantage of the widest diameter of the cow's pelvis. In addition, the direction of pull on the calf is in a direction that is slightly up from a line straight out from the back of the cow.

Figure: 6 Sequence of delivery of calf in backward with normal position and posturing

Common abnormal presentations, positions and postures

Abnormal presentations, positions, and postures are best corrected while the cow is in the standing position

- Elbow lock posture

If one or both of the forelimbs are not extended as they come into the pelvic inlet The partly flexed elbows may lock on the brim of the pelvis and cause elbow lock. This is an easily corrected problem requiring repulsion of the body of the calf while simultaneous traction is exerted on the affected limb

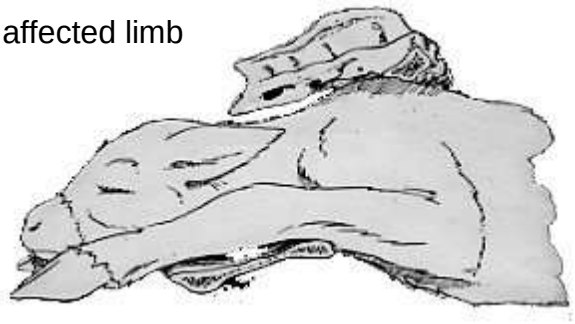

Figure 7: Calf in elbow locks posturing

- **Deviation of the head**

If the head cannot be felt, do not assume that the calf is coming backward. The two front legs may be presented and the head deviated to the side or down between the front. Before pulling on the limbs, distinguish between forelimbs and hind limbs as described earlier. If the head is bent back into the right flank of the cow it will be easier to correct if the left hand is used and vice versa. In all these cases, the head can be brought up and straightened more easily if the body of the calf is at the same time repelled further back into the

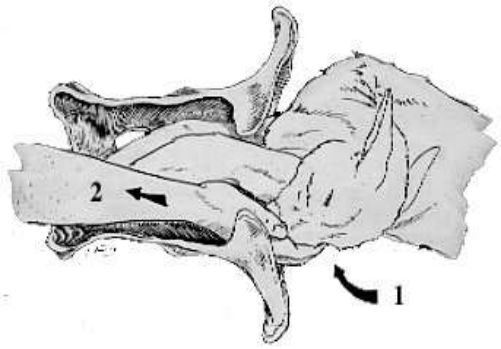

Figure 8: Correction of deviated head by grasping the muzzle or nose of calf

- **Retention of one or both forelimbs**

The calf may have the head out, but one or both forelegs retained. Secure the head by placing a chain behind the poll and through. the mouth, then lubricate the head and push it back into the uterus. Then search for the limbs one at a time.

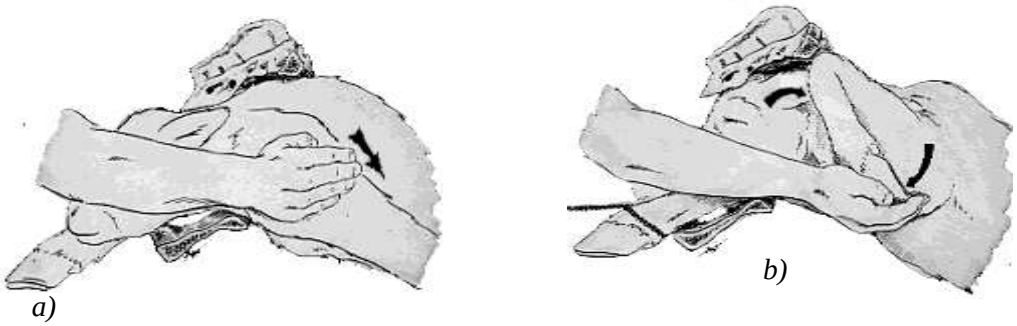

Figure 9: a) Correction of retained forelimb b) hoof toward midline

- Retained hind limb or Backward presentation, breech posture

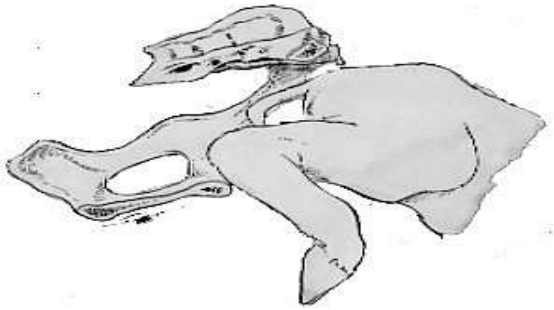

Figure 10: Retained hind limb in flexed hock posture

- Transverse presentation

Occasionally, calves lie with their back against the pelvic opening or with all four limbs extended into the birth canal. Determine the hind from the forelimbs and if possible, deliver hind limbs first so you don't have to worry about the head.

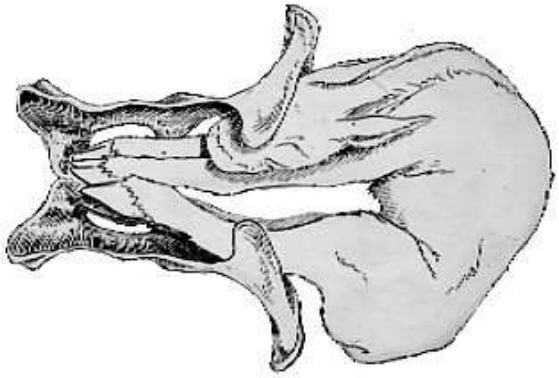

Figure 11:Calfin transverse presentation

Self-Check -6	Written Test

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

1. Write three possible of calf positions for delivery: (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

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Information sheet-7	Placing calving ropes/chains on the calf above the front fetlocks

When calving assistance is necessary, there are a few methods that may aid in the eventual birth of the cattle. It may be possible in some cases, to push the calf back, very gently, into the uterus where it can be repositioned into normal position. In some cases, however, this may not be possible. The calf may still not come out easily. In the event that this happens, an experienced herdsman or a veterinarian will need to pull the calf.

Pulling a calf needs to be done very carefully and gently. It is done best and most safely either with obstetrical (pulling) chains, or a calf puller. When chains are to be used, they should be first disinfected and then looped around each leg of the calf at least twice. The chains should be slid up the front legs so that they are around the cannon bones and are two to three inches above the ankles and dew claws to protect the delicate tendons in the pasterns. The best way to pull the calf is to alternatively pull on each leg and gradually and gently “walk” the calf out until the shoulders have gotten through the pelvis. Pulling should always be done in a downward arcing motion, toward the hocks of the cow.

Figure 12: The proper way to attach pulling chains to a calf’s foreleg.

Self-Check -7	Written Test

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

1. Write best way of pulling calve: (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

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Information sheet-8	Applying calf pulling equipment appropriate in the case of dystocia

An alternative method to deliver a calf is through the use of a calf puller or calf jack. This is an instrument that can effectively have the pulling force of seven full-grown men. These should be used only when necessary, and should be used only by experienced herdsmen or veterinarians. If calving is still not moving smoothly, or other problems are encountered, a veterinarian should be contacted, as a Caesarean section may be necessary to get the calf out alive. Whatever the situation, ultimate care must be taken to avoid doing any harm to the cow. Pulling the calf can cause its hooves to scratch against the uterine tissue, causing dangerous rips and tears in the lining of the uterus or the vagina. Pulling too hard can also tear the cervix or the birth canal, further endangering the cow, not to mention harm the calf.

Fig13 pulling of calve

Fig: calve pulling materials at abnormal delivery time

Self-Check -8	Written Test

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

1. Write results of un correct pulling of calves : (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

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Information sheet-9	Browning specialist support to assist the calving.

If dystocia is very difficult it is better to looking specialist to assist the calving activity. The can assist based complexity of calving.

Cesarean section is now a routine obstetric procedure in cattle practice. It is the method of choice when you are dealing with a live calf and want to optimize calf survivability. In those cases where the calf is already dead, fetotomy is the method of choice due to optimal cow survivability. Remember, C-section is the more invasive of the two procedures. The reasons for surgery include the most causes of dystocia but analysis of published cases shows that the following five major indications account cumulatively for 90% of all C-section or fetotomy procedures:

- Fetal oversize
- Incomplete dilation of cervix
- Irreducible uterine torsion
- Fetal deformity or monsters
- Uncorrectable abnormal presentation, position or posture of fetus.

Self-Check -9	Written Test

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

1. Write the reasons performing of Cesarean section : (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

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Pitcher, Paul, D.V.M. and Sandra Springer. Farrowing Facilities University of Pennsylvania School of Veterinary Medicine, 1997.

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Dairy production

NTQF Level -II

Learning Guide 51

Unit of Competence: Follow up dairy animal parturition

Module Title: Following up dairy animal parturition

LG Code: AGR DPR2 M13 L03 LG 51
TTLM Code: AGR DPR2 TTLM 1219v1

LO 4: Carry out monitoring after calf has been born

Instruction Sheet	Learning Guide 51

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

- Allowing cow to rest and encouraged to lick the calf.
- Checking calves that having for clear airways.
- Lifting the placenta for the cow/doe
- Treating and recording cows with retained placentas or other abnormalities
- Maintaining the calving environment, facilities and equipment
- Reporting or fixing in a safe, hygienic and operational state and faults
- Keeping record of calving

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

- Allow cow to rest and encouraged to lick the calf.
- Check calves that having for clear airways.
- Lift the placenta for the cow/doe
- Treat and recording cows with retained placentas or other abnormalities
- Maintain the calving environment, facilities and equipment
- Report or fixing in a safe, hygienic and operational state and faults
- Keep record of calving

Learning Instructions:

6. Read the specific objectives of this Learning Guide 51.
7. Follow the instructions described in number 1 to 5.
8. Read the information written in the “Information Sheet (**1, 2 3, 4, 5, 6, and 7**) in page **2, 4, 6, 8, 10, 12, and 14** respectively
9. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
10. Accomplish the **“Self-check 1, 2, 3, 4, 5, 7 and 7”** in page**, 3, 5, 7, 9, 11, 13 and 16** respectively.

Information sheet-1	Allowing cow to rest and encouraged to lick the calf.

Allowing cow to rest and encouraged to lick the calf. The majority of cow accepts their calves at birth without problem but on occasion cows have been to reject their calves. When a cow rejects her calf it is essential to try get her to accept the calf as quickly as possible the calf needs the nutrient and care that is naturally provided by his mother.

Cow should naturally lick calves clean after birthing. If your cow is not making a move to perform the motherly duties of cleaning and nursing the calf she may need a little encouragement. One old farmer's trick forgetting a cow to accept her calf is to pour grain over the calf's back when he is first born, encouraging the cow to lick the calf clean in the process of eating grain. If you do not want to use grain, there are also products marketed for the same purpose. These products can pour over the calf to encourage the mother to clean and accept the calf. If your cow simply confused or a little bit uncertain as what to do with the calf, clean should be help her maternal instincts kick in and help her acceptance to the calf.

Fig 1. Cow lick her calf

Self-Check -1	Written Test

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

1. Write importance of encouragement of cow for lick calf : (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
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Information sheet-2	Checking calves that having for clear airways.

After the calf has been delivered check alive or dead ,

- Check for a heart beat by placing a hand on the lower chest just behind the front limbs.
- Calf is alive is to gently touch the surface of the eyeball.
- A blinking reflex indicates life.

After delivering a live fetus, the next critical step is

- Provide an open airway for breathing.
- Use a dry paper or cloth towel to wipe the mouth of excess mucus.
- Stimulate respiration by placing a piece of hay or straw in the nostril to initiate a sneeze and clear the airway.
- Insert a finger in the calf's rectum to initiate a respiratory response, also.
- Vigorous rubbing of the back of the calf also can stimulate breathing.

After the calf is breathing and relatively stable, tend to the calf's umbilicus. Treat it with a mini-mum 2 percent solution of iodine. This preventive practice greatly reduces the chance of the calf developing a systemic illness later.

Figure 12: A newborn lamb being held upside down to clear its airways of fluid and mucus

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Self-Check -2	Written Test

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

1. How to check delivered calf weather alive or dead : (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

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Information sheet-3	Lifting the placenta for the cow/doe

The placenta is the membrane that connects the fetus with the dam. The button like structure of the placenta connected with carnacules of the uterus. It is through these unions (placentomas) that nutrients are transferred from mother to calf. After normal calving, the placenta will be expelled within 30 minutes to 8 hours. If the placenta has not been released after 12hours, the cow will have a condition known as retained placenta.

Normally placenta is expelled in the three stage

- Separate from the uterine muscle
- Then descends in to the lower segment of the uterus and
- vagina then it is expelled outside

Causes / factor /of retained placenta

- Dystocia/ difficulty
- Twin birth, still birth and abortion
- Nutrition factor: mineral and vitamins deficiency, low level of calcium in the blood
- Management factors: stress, obesity
- Infectious disease: brucellosis, leptospirrosis and bovina venereal disease

Symptom of retained placenta

- Degenerating, discolored, ultimately fetid membranes hanging from the vulva
- Remain in the uterus
- Signaled by a foul smelling discharge

Self-Check -3	Written Test

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

2. Write the symptom of retained placenta : (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

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Information sheet-4	Treating and recording cows with retained placentas or other abnormalities

Retained placenta (‘afterbirth’)

The placenta is ‘retained’ if not expelled within 24 hours of calving.

Treatment

If the placenta does not come away naturally, do not try to pull it out as this can cause a hemorrhage and the cow could bleed to death.

- Check 12–24 hours later and, if necessary, leave for another day.
- Treat with antibiotics, and seek veterinary assistance.
- Treat cow immodestly after calving with oxytocin, prostaglandin or calcium

Fig 1. Retained placenta

Prevention

There is no standard preventive regime for retained placenta. Good dry cow management is the best way of prevention RP and reduces its effects. This will include supply of supply of correct nutrients, particularly magnesium and fat soluble vitamins, maximizing dry matter intake, maintain the correct body condition score and supplying a clean dry environment.

Self-Check -4	Written Test

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

1. Write prevention mechanism of retained placenta: (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

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Information sheet-5	Maintaining the calving environment, facilities and equipment

1.1 Maintain calving environment

The calving environment plays a critical role in the calving season's success. For details regarding calving environments, environment may influence both the level of pathogen exposure and the ability of calf to resist disease. Exposure to pathogen may occur through direct contact with other cattle or contaminated environment surface. Keep the environment clean has long been recognized controlling calf diarrhea. A significant proportion of calf losses occur because of calving environment. It is suboptimal for the needs of all individuals within the herd.

1.2 Maintaining calving facility and equipment

Prior to the first calf being born, check calving equipment (chains, straps, calf jacks) to make sure that all is clean and functioning. Clean, disinfect and bed the areas you plan to use and have cleaning agents, disinfectants and bedding on hand throughout the calving season. Stock up on:

- OB sleeves, lube
- soap for washing your hands and the vulva
- towels for drying and stimulating the newborn
- calf blankets for at-risk calves
- naval disinfection
- colostrums replacer and supplements
- milk replacer
- newborn vaccines
- ear tagger and tags

Keep calving heifers separate from mature cows so you can closely monitor them. A heifer should deliver the calf within one hour of the water bag appearing (mature cows will deliver within a half hour).

Self-Check -5	Written Test

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

1. How to maintaining calving facility and equipment : (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

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Information sheet-6	Reporting or fixing in a safe, hygienic and operational state and faults

After completing any work directed by supervisor any work outcome and work problem have to be reported to supervisor

Carry out parturition activity should be reported daily, weekly, monthly and yearly to the concerned body as well as for documentation. It is important source of information and advice from someone who has collected and studied the farm profitability, in order to make decisions and take actions. Reports should be clear, understandable, and meaningful. The outcome measurement process have gone well, poorly reported information will discourage use or provide misleading information.

Some of the report in dairy animal parturition activities

- Health analysis/out breaks
- Profitability of the farm
- Production record report
- Reproduction record report
- Feeds and feeding report
- Material and tools record
- Weather condition and etc

Self-Check -6	Written Test

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

1. What are the reports in dairy animal parturition activities: (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

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Information sheet-7	Keeping record of calving

Proper record keeping will aid in calving management. It is important to know who (cow ID and person assisting), when (date), how (calving score), and result (calving ease score, stillbirth, retained placenta,) to manage the dairy operation's protocols and training process. Proper record keeping will aid in calving management. It is important to know who

- cow ID and person assisting
- when (date)
- sex of calf
- calf identification number
- alive or dead
- retained placenta

Table: 1 service, Calving and lactation period of dairy animals

Cow No.	Service		Calving			Lactation						Service Period	Calving Interval
	Date	Method	Date	Calf Sex	Weight of Dam at Calving	Length	Production	Date Dried	Days Dry	Peak Yield	Date of Peak Yield	Days	Days

Self-Check -7	Written Test

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

1. What can be included in records: (5 points)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

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Reference

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