



ANIMAL HEALTH CARE SERVICE

Level -I

Learning Guide #40

Unit of Competence Support Health Care Provision for Pregnant, Parturient and Lactating Animals

Module Title: Supporting Health Care Provision for Pregnant, Parturient and Lactating Animals

LG Code: AGR AHC1 M11LO2LG42

TTLM Code: AGR AHC1 TTLM 0919V1

LO2. Support health care for pregnant Animals



This learning guide is developed to provide you the necessary information regarding the following content Recording Information on quality and other indicators of production performance.

- Checking animal records and confirming the stage of gestation
- Reporting additional assistance required for assessing pregnancy status to the supervisor for remedial action
- Maintaining a clean, safe and secure environment for pregnant animals.
- Providing adequate nutrition and supplementary feed to pregnant animals as instructed, and recorded accordingly
- Observing the condition and health status of pregnant animals and recording and reporting any abnormalities
- Identifying signs of approaching birth in animals
- Giving female animals' access to shelter to give birth in severe weather conditions.

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:**

- Check animal records and confirming the stage of gestation
- Report additional assistance required for assessing pregnancy status to the supervisor for remedial action
- Maintaining a clean, safe and secure environment for pregnant animals.
- Providing adequate nutrition and supplementary feed to pregnant animals as instructed, and recorded accordingly
- Observing the condition and health status of pregnant animals and recording and reporting any abnormalities
- Identifying signs of approaching birth in animals
- Giving female animals' access to shelter to give birth in severe weather conditions.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4”.
4. Accomplish the “Self-check 1, Self-check t 2, Self-check 3 and Self-check 4” **in page -6, 9, 12 and 14** respectively.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1, Operation Sheet 2 and Operation Sheet 3 ” **in page -15.**
6. Do the “LAP test” **in page – 16** (if you are ready).

Information sheet-1	Checking animal records and confirming the stage of gestation
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1.1 Breeding records

- Breeding records are needed to evaluate breeding efficiency of the animal and determine number of services per conception, none return rate, stage of pregnancy and calving interval.
- The service or insemination date must record including the code and breed of bull to avoid problems of inbreeding and know the percentage of cross breeds that is the base for improvement of fertility in future.
- It should be known that, breeding efficiency of the animal also determined by , the efficiency and ability of the inseminator, and the fertility and quality of the semen.
- Information needed to be recorded also include: the history of previous births and present birth including duration of gestation, history of illness or abnormal discharge in the last few days, duration and signs of labor, number of offspring born - live and dead, interval between births, intensity and pattern of straining, and removal of placenta within normal range or not
- Vaccination of pregnant animals for the prevention of some infectious diseases has been mentioned previously, however, these vaccinations depend on whether or not, the disease is prevalent and the species-specific requirement. Pregnant mares however, need to be essentially given tetanus antitoxin or tetanus toxoid during gestation and immediately after foaling. Special attention need to be attached to the hygiene at the time of parturition and as such, animals must be shifted to hygienic parturition stalls and this would also prevent overcrowding.

1.1.1 Reason for Keeping Records

Farm records are kept for all or some of the following reasons:-

- **To satisfy the Receiver of Revenue**

This is an essential requirement of record keeping but should not be the sole reason, and a record system can be designed which satisfies the Receiver and is also useful for other purposes.

- **To assist in financial planning decisions**

Financial records, in more detail than those required for the Receiver, can be used for cash flow planning, enterprise analysis and other purposes.

- **To control labor**

This is usually a wages book recording days worked, wages paid, money owed, leave *etc.*

- **To assist in land management decisions**

These include farm maps and grazing, irrigation, fertilizer use, crop yield, areas and management operations records.

- **To assist in livestock management decisions**

These are the records of individual animals and groups of animals, their production, health, feed use *etc.*

- **No logical reason**

A lot of useless information is often kept which is never, or can never, be converted into useful information.

1.1. .2 Criteria for Record Keeping

The brief summary of record types given above illustrates that several sets of records must be kept, inevitably involving much of the farmer's time. Hence, if records are not to be more trouble than they are worth, they should satisfy the following criteria:

- **They must be useful**

Unless data which is being recorded will at some future time be used (turned into information) in making management decisions it should not be recorded at all.

- **Records must be kept in such a form that they can be easily converted into information**

Before keeping a record, the eventual end use must be decided upon so that the form in which the data are recorded will facilitate later analysis and interpretation. Too often the end use is not considered, and the usefulness of the data is severely impaired.

- **Record keeping systems must be simple**

Dairy farmers have enough to do without burdening themselves with complex record keeping systems, which are difficult to understand and time consuming to complete, and therefore nearly impossible to delegate to employees.

- **Duplication must be avoided as much as possible**

Some data may have to be recorded more than once in different forms, but this must be reduced to a minimum. In other words, if a

record is to be made in the field, the recording system should be such that data can be conveniently entered in the field and does not have to be re-entered back at the office.

- **Records must lead to actions being taken**

Unless a record is specifically intended to be used for some future action or in management planning it should not be kept.

1.2 Confirming the stage of gestation (pregnancy)

Pregnancy also named gestation is formation of embryo from joining of sperm with the egg, embryo attached to the wall of the womb by a navel cord and grows within a bag. If male and female animals have been allowed to run together in a large herd it will be difficult to determine the expected time for birth (parturition) in natural mating and extensive farming. However, in intensive farming, you do know when a female was mated or given artificial insemination provided enabling to determine stage of gestation and when she animal give birth.

Signs of pregnancy include stopping of sign of heat/estrus/ Heat stops when pregnancy begins; the animal becomes quieter and the belly grows bigger and dropping of the production of milk gradually in lactating animals.

The length of pregnancy differs in different animals. There can be a few days difference either way depending on the type, climate, feed and other factors

Animal	Length of pregnancy
Cow	280 days
Buffalo	320 days
Sheep	150 days
Goat	150 days

Average length of gestation

Species	Length in Days	Avg. in Months*
Cattle	279-292	9
Goats	145-155	5
Sheep	144-151	5
Swine	112-115	3 mo. 3 wks. 3 days
Horse	330-342	11

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. Mention information must recorded to determine stage of pregnancy (4 points)
2. What are signs of pregnancy(4 points)
3. The length of pregnancy of sheep is similar with that of _____(4 points)
 - A) Cow
 - B) Buffalo
 - C) Goat
 - D) None

Note: Satisfactory rating - 6 points

Unsatisfactory - below 6 points

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions

Information sheet-2	Reporting additional assistance required for assessing pregnancy status to the supervisor for remedial action (Pregnancy test)
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2.1 Concept of pregnancy test

Pregnancy testing in cattle has evolved over time. The simplest and most definitive test for pregnancy is to wait until the cow gives birth to the calf. This approach is perhaps acceptable for extensive systems but for intensive systems waiting until calving to identify the pregnant or nonpregnant (open) cows takes too long.

2.1 Methods of pregnancy test

2.1.1 Rectal palpation

The desire for an earlier pregnancy diagnosis led to the routine use of rectal palpation of the uterine contents for the purpose of detecting the pregnancy. Although traditionally practiced from 40 to 60 days after insemination or later, pregnancy diagnosis by rectal palpation can be pushed to its limit of detection (30 to 35 days after insemination) to identify open cows sooner.

2.2 Using transrectal ultrasound

Additional sensitivity can be achieved by using transrectal ultrasound for pregnancy detection. Transrectal ultrasound can be used as early as 25 days after insemination but is more typically applied after day 30 (Fricke, 2002). If performed later (60 to 80 days) then the sex of the calf can be determined when ultrasound is used. Although ultrasound represents a definitive test for pregnancy and can be used to determine the sex of the calf, it requires specialized equipment and the examination generally requires more time than rectal palpation. Regardless of whether rectal

palpation or ultrasound is used, an individual with highly specialized training performs the diagnosis.

This individual is typically a veterinarian or, in some cases, may be a reproductive specialist that is an employee of the farm. A changing cattle industry may affect how pregnancy diagnoses are performed in the future. Intensification of reproductive management in beef herds and the implementation of AI are creating the need for more accurate and timely diagnoses of pregnancy. At the same time, there is a shortage of large animal veterinarians in some regions. The shortage of large animal veterinarians has put pressure on a limited number of experienced veterinarians to complete a large number of pregnancy diagnoses. In some cases there is the desire to perform the pregnancy exams sooner after insemination so that non-pregnant cattle can be identified earlier and resynchronized for a second AI.

2.2.2 Laboratory (Chemical test)

Collectively, these factors are creating an opportunity for the application of chemical pregnancy testing (for example, blood tests for pregnancy). Indeed, a recent report cited rapid growth in the application of one blood test for pregnancy. The cattle industry is clearly moving toward alternative methods of pregnancy diagnosis that do not require skilled practitioners or specialized equipment.

The human pregnancy produces a copious amount of a hormone called hCG (human chorionic gonadotropin) that passes into the urine and can be detected by a simple lateral flow ELISA test. This test is done by women in their homes. Unfortunately cows do not make bovine chorionic gonadotropin (or any such molecule that is readily detectable in the urine) so a simple test that is similar to the human test is not available. There are, however, a series of candidate molecules associated with pregnancy in

cattle (Figure 2). These molecules include: “early pregnancy factor”, interferon-stimulated gen (ISGs), progesterone, and pregnancy-associated glycoproteins (PAGs).

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. What are importance of pregnancy test (6 points)
2. Which is not included in chemical or laboratory test (4 points)
 - E) hCG
 - F) Rectal palpation
 - G) ISGs
 - H) PAGs

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions

Information sheet- 3	Maintaining a clean, safe and secure environment and for pregnant animals.
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3.1 Providing adequate shelter

The housing for pregnant animal should be:regularly sanitized animal barn;
Comfortable bedding;non-slippery floor; well ventilated room and secured from
predators

In the context of general management the factors of importance includes
adequate house space, satisfactory ventilation, facilities for treatment and
disposal of wastes. An investigation of the breeding programmes may reveal
features of significance when line breeding has led to the appearance of inherited
genetic defects. Calving programmeshould be arranged to avoid the incidence of
ketosis, hypomagnesaemia, calf scour and pregnancy toxaemia.

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
buffalo 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 freedom in a field or yard each day. She should be observed
closely twice a day for signs of parturition.

3.2 Identifying environmental and climate influence on their health

The examination of an animal must be accompanied by a consideration of its
surroundings and circumstances. This is more necessary in the case of animals
in groups than for individual animals. The consideration of the surroundings and
circumstances should include an enquiry into such aspects of animal: husbandry,
nutrition, breeding policy, housing, climate, etc

(A) Environment: meticulous examination of the environment may give a fair guidance to diagnose the forthcoming illness of a single animal and a fair percentage of animals in a herd.

Examples: -- Marshy land and stagnant pool encourages the spread of vector-borne diseases such as African horse sickness, fasciolosis, schistosomosis

- Damp soil permits soil-borne diseases such as anthrax, blackleg

- Presence of old flakes of paint or recent painting may be valuable knowledge in relation to lead poisoning.

- Algae in stagnant pools, ponds or shallow lakes may contain neurotoxic and hepatotoxic agents.

(B) Climate

Climatic conditions have influence on many diseases. The relationship between temperature high rainfall and clinical fasciolosis in sheep and cattle is well recognized. Similarly, warm humidity has an important influence on the larval stages of the internal nematode parasites that cause gastroenteritis and parasitic bronchopneumonia.

Intermittent periods of warmth, wet weather and cold moist conditions during the spring season may favour the appearance of hypomagnesaemictetany in cattle and sheep. A period of drought may be sufficiently prolonged to vitamin A deficiency in animals grazing in the dried out herbage.

Self-Check -3	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are requirements in housing of pregnant animal (4 points)

2. What kind of care is needed for pregnant animal at about end of pregnancy (4points)
3. What is the role of considering environment and climate in health of animal

Note: Satisfactory rating - 4 points

Unsatisfactory - below 6 points

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Short Answer Questions

Information sheet- 4	Providing adequate nutrition and supplementary feed to pregnant animals
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4.1 Importance of feeding care for pregnant animal

Pre parturient Care of the mother throughout the gestation and especially during the last part, the nutrition of the pregnant animals is important. Feeding of animals should be oriented in such a way that the prepartum or parturient incidence of some of the commonly occurring metabolic disorders is minimized, a healthy viable progeny is produced and the milk production of the dairy type animals is optimum. It is beyond the scope of this book to discuss all of these strategies in detail. In dairy cattle, farmers often feed their pregnant cows with concentrates only during the last few days of pregnancy and often vegetable oil is added to the concentrates. Although growth of the fetus occurs maximally during the last part of gestation, however, the value of such oil feeding is not beyond doubt. Recent suggestions for feeding of pregnant dry cows include the feeding of high-fiber low-energy chopped straw and the feeding of anionic salts in combination with adequate calcium and magnesium and restriction of rumen degradable protein. Extra energy feed is required for sheep and goats that have been diagnosed to be carrying twins. The feeding of the bitch should be aimed at increasing the energy intake during the last four weeks of pregnancy and 1.0 –1.8% calcium and 0.8-1.6% of phosphorous should be included in the diet of late pregnant bitches

4.2 Different category of animal feed

Supplements: are feedstuffs that are added to the ration of animals to satisfy the nutritional requirement of animals to the level of production targets, since, such feedstuffs containing the required amount and proportion of nutrients.

The cow utilize nutrient for maintenance of her body, for growth as long as she is immature, for the development of her unborn calf during pregnancy, and for milk production after parturition. If the ration is balanced by the addition of the required amounts of other nutrients, feed will not be wasted and more economical production will result.

Balanced Ration: is defined as one that supplies in their correct proportion all the food nutrients necessary to nourish the animals properly and to meet the requirements for her milk production during the 24-hour period.

Since pastures are roughage, they are not enough to satisfy dairy animals with nutrients needed for production. Pastures are roughages characterized by low in nutritive value, low in palatability, and low in digestibility. As a results of this these types of feedstuffs could not be satisfy the nutritional requirements particularly of high producing dairy animals especially in the drought season of the year. Therefore, one should consider supplementation of the ration with feedstuffs containing nutrients required in a proper amount and proportion for desired level of milk production.

Classification of Dairy animal Feeds			
Roughages		Concentrates	
Succulent roughages		Energy rich conc.	Protein rich concentrates
Dry roughages		almost plant origin	plant-origin protein rich conc.
_pasture			
_fodder crops	_crop-residues	_cereal grains	_Oil-seed meals
_tree leaves	_grass hay	-maize	- noug-seed cake
_silages		-wheat	- cotton-seed cake
_tubers and root-crops		-barley,	- sun-flower cake,
_forages and tree		- rice	- etc.
		-sorghum, etc.	
Characterized by:		agro-industry by-products	_animal-origin
<ul style="list-style-type: none"> ★ These are lower in nutritive value ★ Lower in digestibility ★ Lower in palatability ★ Higher in crud-fiber, ★ Lower in crud-protein, and ★ Generally, lower in total digestible nutrients (TDN) ★ They are termed as bulky foods. 		pro.rich	
		- wheat-bran	-meat-meal
		- wheat-floor	-blood-meal
		- wheat-millings	-fish-meal
		- molasses	poultry-by
		products	

	- bag gasses & yeasts	_ Brewer's by-products
	_Roots and Tubers leaves	_Legumes and tree leaves
	-sugar beet	- beans
	-potatoes	- peas
	-yams, and etc.	- soya-beans
	Characterized by:	
	<ul style="list-style-type: none"> ★ Higher in nutritive value (>60%) ★ Higher in digestibility, ★ Higher in crud-protein (>18%), ★ Higher in total digestible nutrients (TDN),and ★ Lower in crud-fiber (<18%) 	

4.3 Role of nutrition for their health

Nutrition related diseases are, in most instances, group problems, so that a number of animals are more or less simultaneously affected. During the grazing season, a study of the pasture composition, along with identification of specific poisonous species, including ergotised grass or rye is advisable in certain circumstances.

Stall- fed animals, in comparison with pasture animals; a nutritional deficiency may exist for quite a time before it is identified. A sudden change from stall to pasture feeding may predispose to hypomagnesaemictetany. Grazing animals, more particularly when adolescent, are exposed to risk of acquiring various parasitic infections, e.g., parasitic gastroenteritis, lungworm infestation, and strongylosis in horses.

Housed animals are exposed to the risk of being under or overfed or of receiving diets which are incomplete or inadequate in respect of some essential constituents. Imported feedstuffs, particularly those of animal origin, are possible

sources of entry for such conditions as FMD, swine fever, anthrax and salmonellosis.

Self-Check -4	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Discuss why feeding for pregnant animal is mandatory (4)
2. Define supplements and balanced feed ration (6 points)
3. Give at least three examples for roughage and concentrate feed categories(4points)

Note: Satisfactory rating - 7 points

Unsatisfactory - below 7 points

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions

Information sheet -5	Observing the condition and health status of pregnant animals and recording and reporting any abnormalities
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5.1 General observation

i. Distinguishing Marks

The distinguishing features of an animal should be carefully noted at the beginning of the examination when the general inspection is made, in order to establish its identity. Accurate identification of the patient is essential for group disease records and in situations where a different veterinarian may make a subsequent visit. The data required include: name and address of the owner, species, breed, sex, age, height or size, colour, horned or polled, brands, tattoo, ear marks, etc.

ii. Physical Condition

It is recognizing body build of an animal and judged by inspection and digital palpation by giving attention to all body prominences, ribs, shoulder, and blade, spinous process of cervical, thoracic and lumbar vertebrae. Besides, dewlap, brisket, thigh muscles and perineal regions should be viewed and judged. From the patho-physiological and nutritional stand point the physical condition can be demarcated as follows:

Normal-in normal animals, all the body prominences of the skeleton are adequately covered with well developed muscles and cushioned fat. The body has normal symmetry.

Fatty (obese)-it is a pathological deposition of a fat. There is abdominal protrusion and body assumes round shape.

Lean (thin)- in lean or thin animals, various parts of the skeleton are prominent (e.g, ribs and pelvis) and the supra orbital fossa are deepened.

Emaciation- in emaciated animals, there is wasting or atrophy of the muscles and bones are very much prominent with depression of supra-orbital fossa. The difference between thinness and emaciation is only of degree.

Hide bound:-there is prolonged emaciation, lustreless with dry leathery skin and reduced elasticity of the skin.

Cachectic (walking skeleton): - prolonged muscular atrophy with deeply sunken eyes is the feature of this state of health. The animal remains with skin and bones, due to this fact it is also termed as “the walking skeleton”.

lii. General Demeanour

General demeanour of animals is a useful indication of nature of disease and it is the response of the animal to external stimuli. In the case of animal in a herd or flock, separation of an individual may be an indication of disease.

Classification Of Demeanour

1. Normal (bright) demeanour
2. Abnormal demeanours

Normal (bright): when, on being approached, an animal make a normal response to external stimuli, such as movement and sound, the demeanour is said to be normal (bright). Normal reaction under these circumstances may consist of elevating the head and ears, turning towards and directing the attention at the source of stimuli, walking away and evincing signs of attack or flight.

Abnormal demeanour

1. Decreased response (depression): this has three stages.

A. dull (apathetic):- this state is appreciated by the reactions to normal stimuli being sluggish or retarded, or even somewhat suppressed.

B. dummy state- this state is an advanced degree of failure to respond to external stimuli although the animal remains standing, and is capable of movement. Encephalomyelitis in horse, and listeriosis and occasional cases of lead poisoning and ketosis in cattle have these signs.

C. Comma- the most advanced degree of apathy (depression) is comma, in which the animal is unconscious and fails to respond to painful stimuli, as in the cow in the advanced stages of parturient paresis (hypocalcaemia) and pregnancy toxemia.

2. Excitation or increased response

a. Apprehension (mildly anxious): - the animal appears alert, looks about constantly, but exhibits normal movements. It may arise due to slight constant pain, in serious defects of vision and the early stage of parturient paresis or hypocalcaemia.

a. Restlessness:- it is a more severe state in which movement is almost constant, consisting of lying down, rolling, getting up again, looking at the flanks, kicking at the belly and groaning or bellowing. This form of behaviour is usually caused by sharp intermittent or constant pain, as in colic syndrome in horse.

c. Mania: in mania the behaviour aberrations appear to compulsive and include vigorous licking of some specific parts of the body surface (ketosis, pseudorabies). Pressing forwards with the head (meningitis) or licking or chewing inanimate objects.

d. Frenzy:- when frenzied, the animals' actions are uncontrolled as in acute lead poisoning, hypomagnesaemictetany and rabies.

iv. Gait

It indicates the locomotors process of an animal. **Locomotors disturbances are seen when the animal moves about voluntarily, or is led or driven at various paces, towards or away from the clinician**

Table: diseases that affect locomotion

Gait	Disease/disorder
Walking in circle	Coenurosis(gid) Otitis(dog/cat)
Enzootic ataxia	hyocuporosis
Goose stepping gait	Heart water in calf
Painful limb movement (lameness)	Laminitis Foot rot

v. Posture

It denotes the anatomical configuration when the animals remain in stationary situation. How does it stand? How does it sit? How does it lie?

Examples that indicate abnormalities of posture

Kyphosis – it is dorsal bending of the spinal column.

Lordosis – it is ventral bending of the spinal column.

Dog-sitting-position in acute gastro-distention in the horse, pain and pressure on the diaphragm cause the animal to adopt the “dog-sitting-position”.

5.2 Examination of feeding habits

Appetite or the desire to feeding is controlled by appetite centre in the hypothalamus. It is assessed by history and inspection of the animal in the presence of feedstuffs. Feed intake (prehension), mastication and rumination (in ruminants) give crucial clue as to the health status of the animal. In the inspection of the animal one can detect desire to take in feed but because of difficulty of mastication or deglutition it refuses to eat. This is caused by lesions in the oral and oesophageal regions; muscular paralysis of the associated muscles (e.g. tetanus) and defects of taste buds.

Absence of rumination in ruminants shows the presence of septicemic diseases or deprivation of feed.

Abnormalities in appetite

- a) Inappetance—is reduction of feed intake, caused by unsuitable feed, inability to prehend, masticate or swallow due to pain in the digestive tract and GIT diseases.
- b) Anorexia—is complete loss of appetite, caused by dietary deficiency like Co, submerged hunger sensation (due to fear, excitement or severe pain), toxæmia and GIT problems.
- c) Polyphagia—increased appetite, caused by diabetes, abnormality in absorption, excess starvation.
Polydypsea—increased water intake, caused by loss of body fluid.
- d) Abnormal appetite—consumption of substances, which don't fall in the normal diet of that specific species of animal. It is sometimes known as **pica**.

Causes - nutritional deficiency—P, Ca, salt, Co, Cu, protein, bulk fibre

- Nervous diseases—rabies, ketosis

5.3 Sign of abnormality on reproductive organ

Female genital organs comprise the vulva, vagina, cervix, uterus and ovaries. Examination can be done by visual inspection, external palpation, internal palpation and the use of endoscopy. Symmetrical enlargement of Vulva is normal in oestrus and few days before parturition. It is pathological in ovarian cyst and inflammation. Regarding discharges from reproductive organs Bloody to thin mucoid discharge shows the beginning of oestrus. Tough, glass mucous indicates the impending of parturition. Thin and dirty to thick, yellow and mucopurulent discharge on the other hand is observed in vaginitis and metritis while foul smelling, dirty pink to yellowish discharge designates retained placenta.

Vaginal and cervical examination is accomplished by opening manually or with metal speculum and with the use of artificial light. The following can be detected: vaginitis, metritis exudates, cervicitis, and presence of faeces in recto-vaginal fistulas. The uterus and ovaries are examined by rectal palpation.

Mammary glands and teats are examined by visual inspection and palpation. Different forms of mastitis may have different characteristic changes in the udder and milk. Swelling of udder and teats, local hyperaemia, firm consistency of udder, and flakes or blood and any colour change in the milk can be detected. Milk samples can also be submitted to laboratories for bacteriological, biochemical and chemical examinations

5.4 Signs of abortion

The fetus and its environment are so damaged that survival is impossible and the contents of the uterus pass out through the cervix. In the larger species, some assistance may be needed to help the dam deliver the aborted fetus and normal obstetric methods are used for this. In the case of the dog and cat, abortion may occasionally pass unnoticed and the dam consumes the small conceptuses.

Once the process of abortion commences little can be done to stop it. In women, threatened miscarriage can be halted in some cases by bed rest, but this is not possible in animals. All cases of abortion should be investigated to ensure that there is not an infectious cause that could be transmitted to other animals. The cause should be assumed to be infectious and hygienic precautions taken immediately until a definitive diagnosis is available.

Note

Not all the litter are necessarily affected by adverse factors and some of the litter will die whereas the rest survive. If the majority of a polytocous litter die, actual abortion will probably occur. In other cases, the minority are affected and become mummified and are eventually delivered at the time the rest of the litter are born at term. The management of cases of late, partial abortion in the bitch is discussed in Chapter 9.

In dogs (and possibly pigs and cats) the phenomenon of *fetal resorption* can occur. Cases in which pregnancy has been confirmed are later found to be non-pregnant and yet no evidence of abortion has been observed. In other cases, the number of fetuses born is less than the number of fetuses clearly demonstrated by ultrasonography earlier in pregnancy. In such cases fetal tissues are believed to become autolyzed and 'digested' by scavenger cells in the blood. Resorption of part of the litter may occur in subsequent litters in some dogs and cats. Sequential ultrasonographic scans of such patients may demonstrate the death and eventual disappearance of individual fetuses, often at 4-5 weeks of pregnancy. The reason for such fetal deaths is not known but may be caused by lack of space for individual placentas. Plasma progesterone profiles of such patients usually remain at normal levels.

Self-Check -5	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Discuss general condition abnormalities (4)
2. What feeding habits need to be considered (4 points)
3. Mention positive findings for abnormalities on reproductive organ (4 points)
4. What are signs of abortion?

Note: Satisfactory rating - 7 points

Unsatisfactory - below 8 points

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Short Answer Questions

Information sheet-6	Identifying signs of approaching birth in animals
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6.1 Signs of approaching parturition

Some externally visible changes do occur in animals when parturition is approaching. The most important external changes of approaching parturition are seen in the udder, vulva and pelvic ligaments and to some extent in the behavior. The symptoms are inconsistent between individual animals, and between consecutive parturitions. The symptoms therefore, do not permit an accurate prediction as to the exact time of parturition in a certain animal but are only useful indications as to the approximate time parturition can be expected. Clinicians must therefore refrain from too positive statements concerning the exact time of parturition.

6.2 Stages of parturition

For ease of description, parturition is divided into three stages. There is no clear demarcation between the stages, which normally merge with each other to become a continuous process. The length of each stage is quite variable. Before parturition a number of other preparatory changes such as mammary development and relaxation of the pelvic ligaments occur. The timing of these preparatory changes varies between individual animals, making them rather unreliable indicators of approaching birth.

The main *physiological events* of the three stages of labor are listed below:

- *First stage:*

- relaxation and dilation of cervix
- fetus adopts birth posture
- uterine contraction commences
- chorioallantois enters vagina

- *Second stage:*

- uterine contraction continues
- fetus enters birth canal
- abdominal contraction commences
- amnion enters vagina
- fetus is expelled

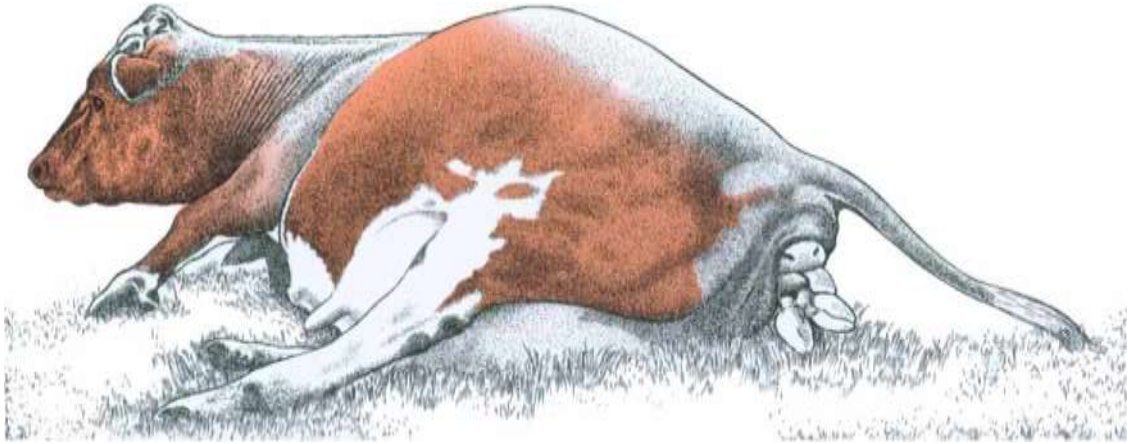


Figure 1.1 Early second-stage labor in the cow. The calf's muzzle is level with the fetlock joints of the forelimb. The amnion has ruptured and the calf's tongue is protruding. The calf's position has rotated about 45° from the dorsal position.



Figure 1.2 Late second-stage labor in the cow. The fetal head and part of the shoulders have been delivered.



Fig.1.3 Second-stage labor is complete. The cow has risen and is licking the calf, which is attempting to assume sternal recumbency.

- *Third stage:*

- placental circulation lost
- placental dehiscence and separation occurs
- uterine and abdominal contractions continue
- Placenta is expelled.

The fetal membranes are normally expelled within 12 hours of birth. Retention beyond 12 hours is often followed by a further period of retention lasting from 3 to 10 days unless the membranes are removed manually.

Note- Separate birthing/calving pen or area is needed to ensure access to safe shelter and reduce damage by other animals during giving birth (delivery)

Operation Sheet-1	Techniques of determining stage of pregnancy
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Methods

- Step-1: Demonstrate one dairy farm
- Step-2: Presence of appropriate records
- Step-3: Estimate stage of pregnancy based on history
- Step-4: Confirm stage of pregnancy by general examination
- Step-5: Confirm stage of pregnancy by rectal palpation
- Step-6: Confirm access to safe environment and adequate nutrition

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 2 hours.

Task-1: Record information related to this animal

Task-2: Do general examination of pregnant animal

Task-3: Do pregnancy test by rectal palpation

Task-4: Provide nutrition for pregnant animal

REFERENCE

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