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Lecture title: Cattle husbandry

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Summary: This lecture highlights the adolescence stage of female, signs of oestrus in cattle, factors affecting puberty and sexual maturity, factors affecting variations in estrus length period, pregnancy signs of cow, pre-labour care and labor stages

Adolescence stage of female

This stage starts from six months to first parturition of the animal (2.5-3yr). Attention must be directed towards female (heifers) at their first year of age by offering sufficient amount of concentrated rations (rich with protein). Female (heifers) during their puberty (8^{th}-14^{th} month of age), must be put under special observation.

Signs of Oestrus in cattle

1. Behavioral disturbance alongside standing.
2. Mounting on other animals (if they are free).
3. Tail switching "flicking" and raising.
4. Decrease feed consumption and decrease rumination.
5. Increase frequency of urination with excretion of urine as drops.
6. Special sound of cow "bellowing" in regular period.
7. Congestion of mucous membranes of vagina and secretion of transparent fluid from vulva.

Note: puberty means the age which shows the first estrus (in cattle it is eight months to 14^{th} month of age). Sexual maturity takes place in cattle at 1.5-2 years).

Factors affecting puberty and sexual maturity

1. Breed of animal.
2. Type of feed.
3. Feed composition.
4. Health state of animal.
5. Environmental factors.
6. Systems of management and husbandry.

Estrus appears at regular periods during the year when there is no pregnancy "non-seasonal polyestrus". The interval period between two successive estrus is" 21" days. Estrus beings mostly at night or early morning, estrus last 9_28 hours.

Factors affecting variations in estrus length period

1. Breed.
2. Age: estrus is short in young but in old cow is longer.
3. Environment conditions: climate, season. Estrus is short in hot season.
4. Health status of cow.

Mating takes place at the end estrus period. Heifers mated for the first time should be noticed. Bulls use to mate heifers for the first time should be clinically examined to prevent transmission of disease such as contagious abortion (brucellosis), contagious vaginitis.

Pregnancy signs of cow

1. Cessation of oestrous cycle.
2. Cow rejection and refusal of the bull.
3. Physical improvement of health status of cow and increase body weight.
4. Calmness of cow and it is return to its normal position.
5. Gradual increase of abdomen size, pendency towards down wardback arching.

These signs can be seen in the 4^{th} month of gestation.

6. In lactating cows, decrease milk secretion and enlargement of udder and its prominence at the 8^{th} month of gestation.
7. Pregnancy diagnosis and determination its stage can be known by "rectal palpation"

a. Gradual excessive growth of gravid uterus horn in comparison with other non _gravid horn. At the 2^{nd} month of pregnancy, the horn looks like bull testis which is filled with fluid.

b. By palpation: increase thickness of uterus wall can be felt due to formation of fetal membranes and their adhesion to gravid uterus horn.

c. By palpation of ovary: full_ formed Corpus Luteum (yellow body) can be felt.

d. From 2_4 months, the increase size of gravid horn can be felt with its pendency in the abdomen.

e. From 4_6 months, the gravid uterus is pendulous in the abdominal cavity.

f. Enlargement and pulsation middle uterine artery at rectal palpation after the fourth month of pregnancy.

8. Fetus movement can be observed after the 5th month of pregnancy by deprivation feed and water from a cow 24 hours. At this time, cold water is given or be poured to right flank of the cow, immediate movement of fetus can be seen.

9. Pregnancy can be diagnosed by examination of vagina and cervix of uterus by using vaginoscope.

10. Biochemical test (blood and urine examination).

Gestation period ranges between 279-289 days (mean 280 day).

Pre_ labour Care

Labour can be known using "mating records". Signs of labor includes disturbance of the animal, relaxation of abdominal ligaments, enlargement and congestion (engorgement) of the vulva due to increase blood supply. Enlargment of the udder and teats (swelling) which are filled with colostrun.

Dryness of secreted colostrum,spontaneous fetus movement can be seen on the abdomen of animal.

Labor process is divided into three stages:

i.First stage:

The dam becomes worrying, decrease feed intake, with enlargement of udder, increase body temperature and pulse (heart rate), contraction of uterine muscles with dilatation of cervix of uterus lead to gradual appearance of fetal sac, followed by explosion, rupture and emergence of the fetus.

ii. Second stage: Expulsion of the fetal:

Total contraction of all muscles of uterus, abdominal wall and diaphragm cause the expulsion of the fetus from uterus to vagina. Emergence of the feus takes place by the appearance of fetal membranes.

iii.Third stage: Expulsion of the placenta:

Remain of placenta and fetal membranes are expelled due to contraction of muscles of uterus, diaphragm and abdominal wall.

Immediate post_labour Care

Attention should be directed toward the udder health, if the teats are small and short (which are frequently encountered in heifers or first calvers), enlargement of these teats must be carried out by frequent manual massage immediately after labor by piece of wool for the purpose of extension and expansion to their normal size. If this process does not occur, the teats remain small. Expulsion of the fetal and placental membranes must be observed. Usually, such expulsion takes place immediately after labor but if these membranes remain in the uterus, it is a pathological condition called "Retained Placenta". It can treated by putting such cow in special position, in which her back end should be located downwards or to tie a heavy matter in the end (free part) of the placenta which is pendulous outside the body. This process will assist these membranes to be pulled and removed or expelled through the walking of the cow. However, retained placenta can be removed manually by veterinarian by injection the animal with 3-6 cc of oxytocin immediately after parturition