Repeat breeder

Definition:

A cow / buffalo which has normal or nearly normal estrous cycle and estrus period and has been bred or artificially inseminated three or more times continuously to a fertile bull or with semen of fertile bull yet failed to conceive, is called a repeat breeder.

Causes:

-Failure of fertilization and early embryonic death are two main reasons responsible for repeat breeding syndrome.

• Anovulatory heat

• Delayed ovulation

• Early embryonic death

• Failure of nidation of fertilized ovum

• Deficiency of energy

• Deficiency of progesterone

• Excess of estrogen

• First degree endometritis

• Aged sperm and ovum

• Poor hygiene at the time of calving and A.I.

• Poor management and handling of frozen semen

• High ambient temperature and humidity

• Urovagina

• Pneumovagina

• Malnutrition

Diagnosis and treatment:

1. An ovulatory heat and delayed ovulation:

• Examine the ovaries on the day of estrus and record the location of follicle.

• Examine the animal again first day and second day, considering the day of estrus as zero to know whether the ovulation has occurred or not.

• If ovulation occurs, there will be a ovulatory depression on the ovary in place of mature graafian follicle.

• If the animal ovulates second day or later on, it is a case of delayed ovulation.

• In case of delayed ovulation, a cow can be inseminated two or three times at 12 hours interval.

• Examine the ovaries on 9th or 10th day of estrus for presence of corpus luteum. If corpus luteum is not present on the ovary, it is a case of an ovulatory heat.

Treatment:

GnRH analogues or hCG at the time of insemination to promote ovulation.

Dose: Receptal 2.5 ml. I/M.

2. Early embryonic death within 16 days after A.I.

- When embryonic death occurs within 16 days of the cycle i.e. before maternal recognition of pregnancy (MRP), then the cow comes in heat at normal estrous cycle length (18-22 days).

Causes of embryonic death:

- External factors:

1- Stress like pain & long transportation etc.

2- Malnutrition

3- Season and climate like summer

- Maternal factors

1- Progesterone deficiency

2- Uterine infection

3- Embryonic factors like chromosomal abnormalities

4- Genetic factors

Treatment:

• If early embryonic death occurs due to genetic cause, change of bull may help to overcome this defect.

• When early embryonic death occurs due to external or environmental factors, proper management may help to overcome this defect.

• Subclinical uterine infections also cause early embryonic death.

- For this, intrauterine or systemic antibiotic therapy is indicated.

- Most common treatment in practice is to do pre- AI antibiotic treatment or post-AI antibiotic treatment: For this, 10 IU penicillin or 1gm. streptopenicillin should be dissolved in 20-30 ml. of distilled water.

- Pre AI treatment should be given 5 to 6 hours before AI while post AI treatment should be given 3 to 6 hours after AI.

- Parenteral antibiotics (preferably strepto penicillin 2.5 gm.) should be given on day 4 and on day 10 because zygote comes to uterus on day 4 and zona hatching and nidation of embryo occur around the day 10; so that the antibiotics enters into the uterine fluid around these periods and controls the infection.

• Embryonic mortality can occur due to heat stress, so the inseminated cow/ buffalo should be kept in a cool place or in sheds for 15 days after insemination. Adequate access to water and cooling with water is also highly effective.

Progesterone deficiency:

• Corpus luteum is the source of progesterone. If it is not completely formed or it is not functioning adequately, then insufficient progesterone causes pregnancy failure.

• Therefore, progesterone should be administered 3 to 5 days after insemination and continued for a variable period of 2 to 3 weeks which improves the conception rate in repeat breeder cows that have luteal deficiency.

• Administration of hCG (2000 I.U. IM or 1000 I.U. I/V) 5 days after estrus induces ovulation of the dominant follicle of first wave and formation of an accessory corpus luteum which increase the plasma progesterone level. In

this way, it reduces the incidence of embryonic mortality. It gives better result than progesterone administration.

• Administration of GnRH analogue (Buserelin 10 µg. or 2.5 ml) on day 11 after insemination, reduces the embryonic mortality.

3. Deficiency of oxytocin:

- The lack of tonicity of uterus in an estrous animal may be due to deficiency of oxytocin. These animals may pass large quantity of urine when examined per rectally. 30-50 IU oxytocin should be injected intramuscularly after insemination.

4. Poor management:

• Animal should not be excited 15 minutes prior to, during or 15 minutes after AI. Excitation causes the release of adrenaline thereby lowering the action of oxytocin which is required for sperm transport.

• In cattle, the clitoris should be massaged gently two to three times after AI. This helps in sperm transport and ovulation.

• Cold water should be poured on the back of the animal after AI which causes abdominal muscles contraction and in turn of uterine muscles and thus, helps in sperm transport.

• Fifteen minutes rest is necessary after AI so that the sperm can reach the utero-tubal junction.

• The owner should be given advice to examine the mucosa of vulvar lips of the animal daily for "next three days" to notice any pus-flakes, which is an indication of first or second degree endometritis and such cases should be treated appropriately in the next cycle.

• Proper thawing of frozen semen and AI should be done within few minutes after thawing.

• Proper insemination technique should be followed to deposit the semen just after the anterior end of cervix or in the body of uterus otherwise it will cause trauma to the genital tract.

5. Deficiency of energy: If deficiency of energy is suspected, 20% dextrose intravenous should be given 1 to 2 hours prior to AI.